ORDER NO. ARD82040133C8-11

Service Manual

Cassette Deck

RS-M216

(Black Face
Silver Face)

Slim Type Cassette Deck with New Soft Mechanism and Peak Hold FL Meters

DOLBY SYSTEM

This is the Service Manual for the following areas.
- [D] ..... For all European areas except United Kingdom.
- [B] ..... For United Kingdom.
- [N] ..... For Asia, Latin America, Middle East and Africa areas.

RS-M24 MECHANISM SERIES

Specifications

Track system:	4-track 2-channel stereo recording and playback
Motor:	Electrical governor motor
Tape speed:	4.8 cm/s
Wow and flutter:	0.05% (WRMS), ±0.14% (DIN)
Frequency response:	Metal tape; 20—17,000 Hz
	40—16,000 Hz (DIN)
	CrO_2 tape; 20—16,000 Hz
	40—15,000 Hz (DIN)
	Normal tape; 20—15,000 Hz
	40—14,000 Hz (DIN)
Signal-to-noise ratio:	Dolby* NR in; 66 dB (above 5 kHz)
	Dolby NR out; 56 dB
	(signal level = max. input level A weighted, CrO_2 type tape)
Fast forward and rewind time:	Approx. 90 seconds with C-60 cassette tape
Inputs:	MIC; sensitivity 0.25 mV, applicable microphone impedance 400Ω—10 kΩ
	LINE; sensitivity 60 mV, input impedance more than 40 kΩ
Outputs:	LINE; output level 400 mV, output impedance 1.5 kΩ or less
	HEADPHONES; output level 80 mV (8Ω) applicable headphone impedance 8Ω—600Ω
Bias frequency:	80 kHz
Heads:	2-head system
	1 MX head for record/playback
	1 double-gap ferrite head for erasure
Power requirements:	[D] ··· AC 220 V, 50-60 Hz
	[B] ··· AC 240 V, 50 Hz
	[N] ··· AC 110/125/220/240 V, 50-60 Hz
Power consumption:	11 W
Dimensions:	43 cm(W) × 10.9 cm(H) × 23.3 cm(D)
Weight:	4.0 kg

Specifications are subject to change without notice.

* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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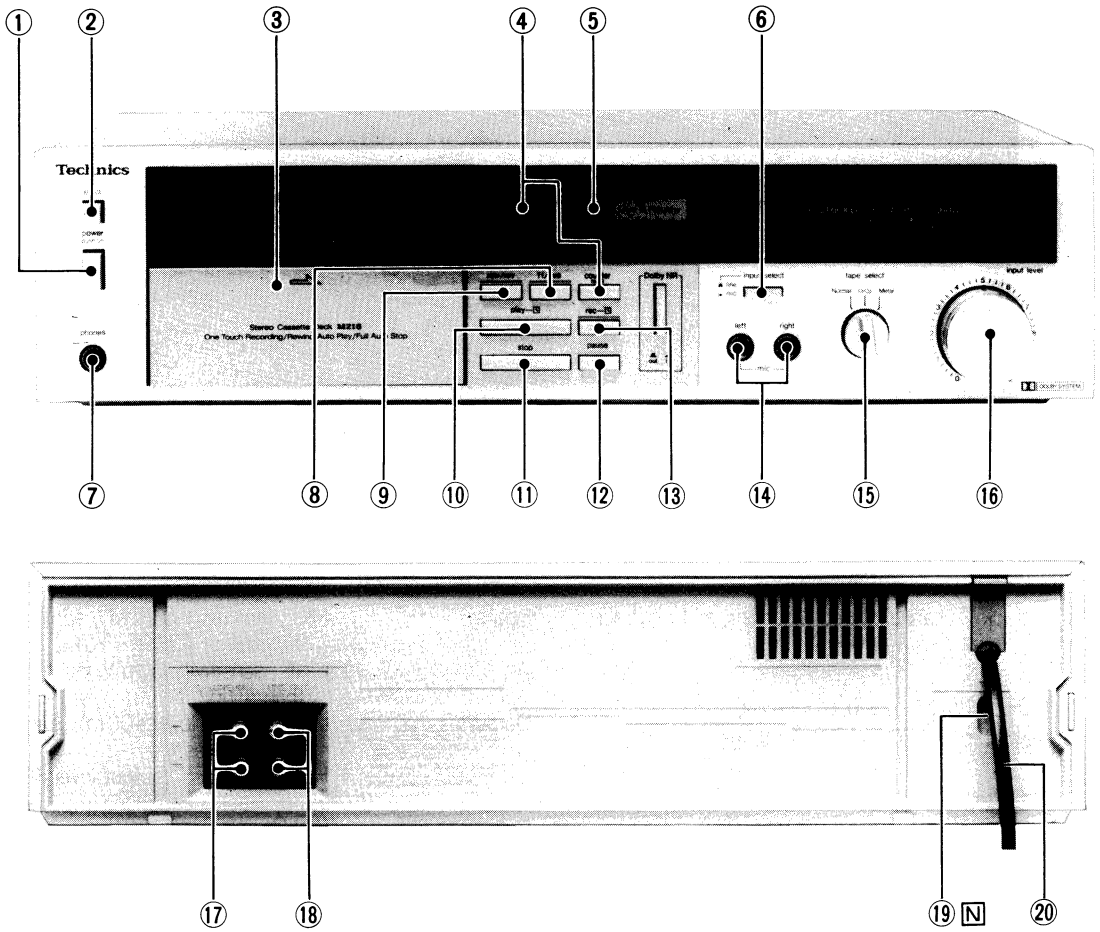
LOCATION OF CONTROLS AND COMPONENTS



① Power ON/OFF switch
② Eject button
③ Cassette holder
④ Tape counter and Reset button
⑤ Recording indicator
⑥ Input selector
⑦ Headphones jack
⑧ Fast forward/Cue button
⑨ Rewind/Review button
⑩ Play button
⑪ Stop button
⑫ Pause button
⑬ Record button
⑭ Microphone jacks
⑮ Tape selector
⑯ Input level controls
⑰ Line in jacks
⑱ Line out jacks
⑲ AC power voltage selector
* [N] ...For Asia, Latin America, Middle East and Africa areas.
⑳ AC power cord.

DISASSEMBLY INSTRUCTIONS

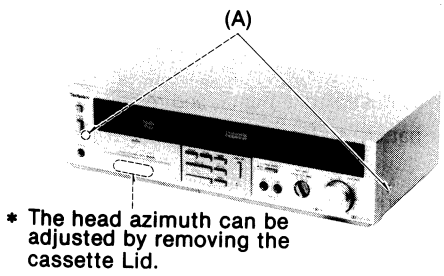


Fig. 1

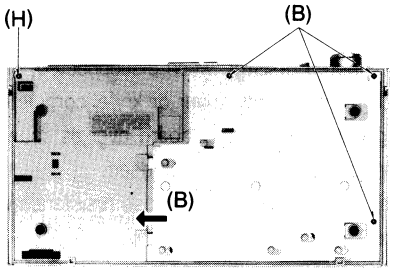


Fig. 2

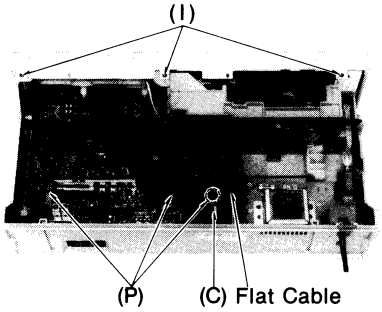


Fig. 3

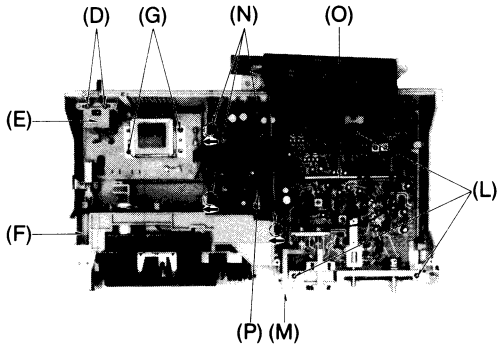


Fig. 4

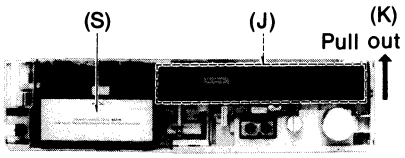


Fig. 5

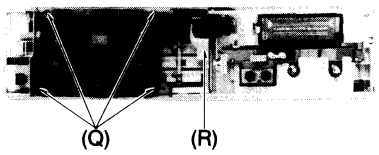


Fig. 6

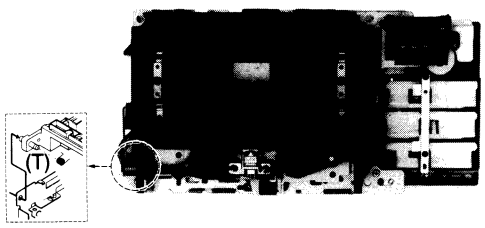


Fig. 7

Ref. No.	Procedure	To remove —— .	Remove —— .	Shown in fig. —— .
1	1	Case cover	• 2 screws ····· (A)	1
2	2	Bottom cover	• 3 screws ····· (B) (Slide in direction of arrow) ····· (B')	2
3	1 → 3	Power supply circuit board	• Pull out the flat cable from connector 4 ····· (C) • 2 screws ····· (D) • Cord clamper ····· (E) • Pull out the switch rod-C ····· (F) • 2 red screws ····· (G)	3 4 4 4 4
4	1 → 2 → 4	Front panel	• 1 screw ····· (H) • 3 screws ····· (I)	2 3
5	1 → 2 → 4 → 5	FL meter unit	• Meter cover and meter-filter ····· (J) • Pull out the FL meter-unit ····· (K)	5 5
6	1 → 2 → 4 → 5 → 6	Main circuit board	• 3 red screws ····· (L) • Pull out the switch rod-B ····· (M) • Push the claw in the direction ····· (N) • Pull out the record/playback connection wire ····· (O) • Pull out the flat cable from connector 4 ····· (C) • Pull out the 4 sockets ····· (P)	4 4 4 4 3 3, 4
7	1 → 2 → 4 → 5 → 7	Mechanism unit	• 4 red screws ····· (Q) • Pull out the counter reset lever ····· (R)	6 6
8	1 → 2 → 4 → 5 → 7 → 8	Cassette holder	• Cassette lid ····· (S) • Slide in direction of arrow ····· (T)	5 7

HOW TO REPAIR PRNTED RESISTORS

- The printed resistor is located on the printed circuit board as illustrated in Fig. 1.
  (The through-holes are the points that connect the silver pattern and the pattern on the rear of the printed circuit board.)
- Repair the printed resistor, when disconnected, in the following procedure:
  1. Using a pointed screwdriver or knife, completely scrape the printed resistor as illustrated in Fig. 2, and remove its shavings.
  2. Turning the printed circuit board over as shown in Fig. 3, scrape the copper pattern surface near the through-holes until the copper foil surface can be exposed.
  3. Solder the carbon resistor, whose resistance value is identical to the removed printed resistor, to the exposed copper foil surface.
     (Refer to the schematic diagram of the Service Manual for the resistance values of printed resistors.)

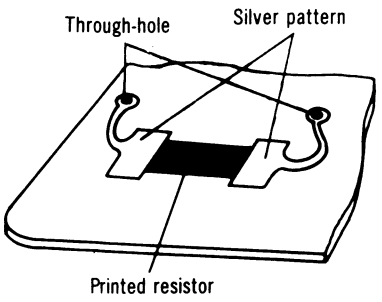


Fig. 1

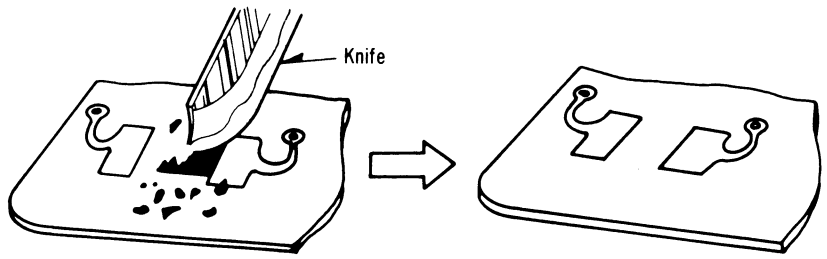


Fig. 2

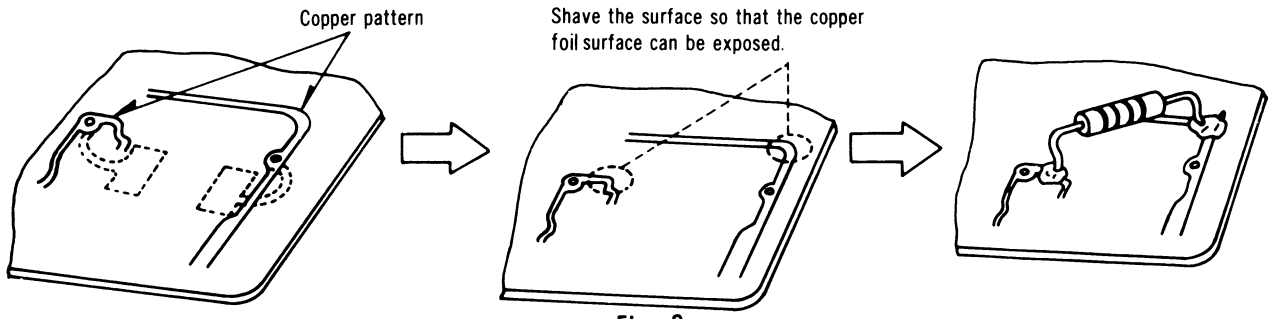


Fig. 3

MEASUREMENT AND ADJUSTMENT METHODS

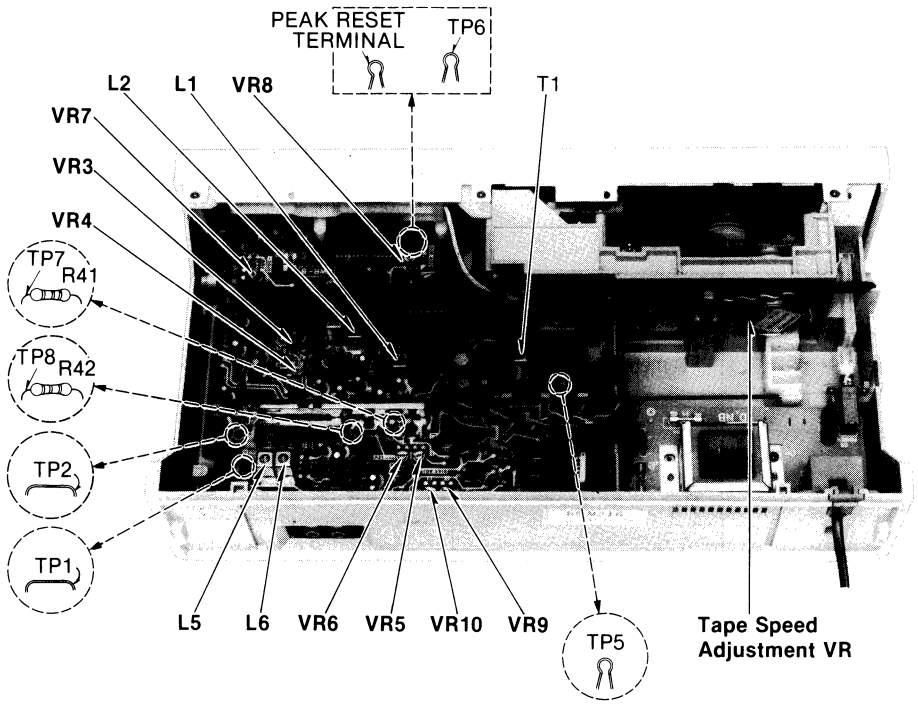
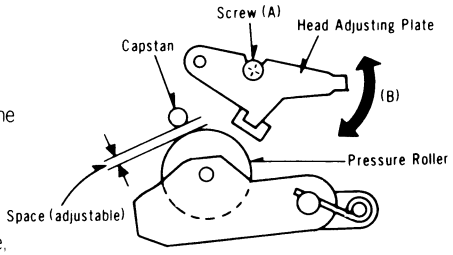
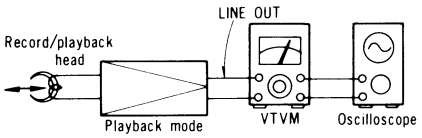
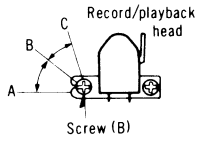
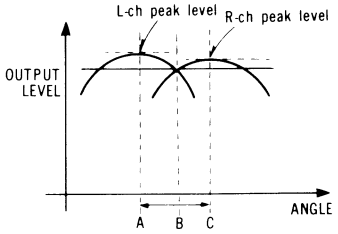
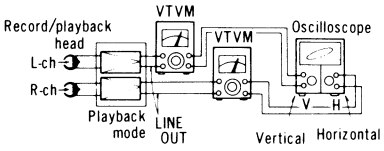
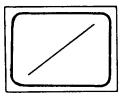
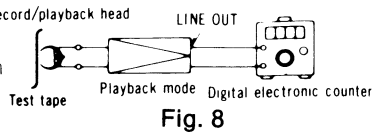
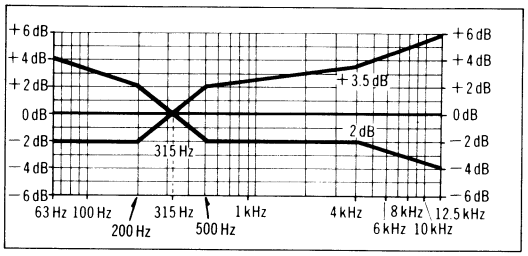
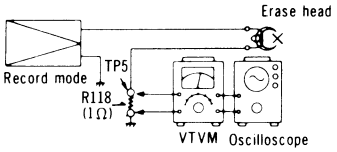
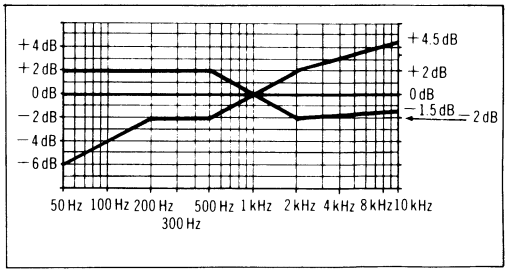


Fig. 1

NOTES: Keep good condition, set switches and controls in the following positions, unless otherwise specified.

- Make sure heads are clean.
- Make sure capstan and pressure roller are clean.
- Judgeable room temperature: 20 ± 5°C (68 ± 9°F)
- Dolby NR switch: OUT
- Tape selector: Normal position
- Input selector: Line in
- Input level controls: Maximum

ITEM	MEASUREMENT & ADJUSTMENT
Ⓐ Head position adjustment Condition: • Playback and pause mode	(The head adjusting plate is provided to adjust the tape touch of the head in cue or review mode.) 1. Press the playback button and pause button. 2. Measure the space between the pressure roller and the capstan. **Standard value: 0.5 ± 0.3mm** 3. If the measured value is not within the standard value, untighten screw (A), and slide the head adjusting plate in the direction of arrow (B) for adjustment.  **Fig. 2**
Ⓑ Head azimuth adjustment Condition: • Playback mode Equipment: • VTVM • Oscilloscope • Test tape (azimuth) ··· QZZCFM	**L-ch/R-ch output balance adjustment** 1. Make connections as shown in fig. 3.  **Fig. 3** 2. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) in fig. 4 for maximum output L-ch and R-ch levels. When the output levels of L-ch and R-ch are not at maximum at the same time, readjust as follows. 3. Turn the screw shown in fig. 4 to find angles A and C (points where peak output levels for left and right channels are obtained). Then, locate the angle B between angles A and C, i.e., a point where L-ch and R-ch output levels come together at maximum. (Refer to figs. 4 and 5.)  **Fig. 4**  **Fig. 5** **L-ch/R-ch phase adjustment** 4. Make connections as shown in fig. 6. 5. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) shown in fig. 4 so that pointers of the two VTVMs swing to maximum and a waveform as illustrated in fig. 7 is obtained on the oscilloscope.  **Fig. 6**  **Fig. 7**
Ⓒ Tape speed Condition: • Playback mode Equipment: • Digital electronic counter or frequency counter • Test tape ··· QZZCWAT	**Tape speed accuracy** 1. Test equipment connection is shown in fig. 8. 2. Playback test tape (QZZCWAT 3,000Hz) at middle section and supply playback signal to frequency counter. 3. Measure this frequency. 4. On the basis of 3,000Hz, determine value by following formula: $\text{Tape speed accuracy} = \frac{f - 3{,}000}{3{,}000} \times 100\,(\%)$ where, f = measured value **Standard value: ± 1.5%**  **Fig. 8** **Adjustment method** 1. Playback the test tape (middle) 2. Adjust so that frequency becomes 3,000Hz. 3. Tape speed adjustment VR shown in fig. 1.

ITEM	MEASUREMENT & ADJUSTMENT
	Tape speed fluctuation Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows: Tape speed fluctuation $= \frac{f_1 - f_2}{3{,}000} \times 100\,(\%)$ f_1 = maximum value, f_2 = minimum value **Standard value: Less than 1%** **Note:** Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.
Ⓓ Playback frequency response Condition: * Playback mode * Tape selector ··· Normal position Equipment: * VTVM * Oscilloscope * Test tape ··· QZZCFM	1. Test equipment connection is shown in fig. 3. 2. Place UNIT into playback mode. 3. Playback the frequency response test tape (QZZCFM). 4. Measure output level at 315 Hz, 12.5 kHz, 8 kHz, 4 kHz, 1 kHz, 250 Hz, 125 Hz and 63 Hz, and compare each output level with the standard frequency 315 Hz, at LINE OUT. 5. Make measurement for both channels. 6. Make sure that the measured value is within the range specified in the frequency response chart (shown in fig. 9). **Playback frequency response chart**  **Fig. 9**
Ⓔ Playback gain Condition: * Playback mode * Tape selector ··· Normal position Equipment: * VTVM * Oscilloscope * Test tape ··· QZZCFM	1. Test equipment connection is shown in fig. 3. 2. Playback standard recording level portion on test tape (QZZCFM 315 Hz), and using VTVM measure the output level at LINE OUT. 3. Make measurement for both channels. **Standard value: 0.4 V ± 1 dB [around 0.42 V: at test points TP3 (L-CH) and TP4 (R-CH)]** **Adjustment** 1. If measured value is not within standard, adjust VR1 (L-CH), VR2 (R-CH) (See fig. 1 on page 4). 2. After adjustment, check "Playback frequency response" again.
Ⓕ Erase current Condition: * Record mode * Tape selector ··· Metal position Equipment: * VTVM * Oscilloscope	1. Test equipment connection is shown in fig. 10. 2. Press the record and pause buttons. 3. Set the tape selector to metal position. 4. Read voltage on VTVM and calculate erase current by following formula: Erase current (A) $= \frac{\text{Voltage across both ends of R118}}{1\,(\Omega)}$ **Standard value: 155 ± 15 mA (Metal position)**  **Fig. 10** 5. If measured value is not within standard, adjust as follows. **Adjustment** 1. Open the point (A) and short the point (B) on the main circuit board in the wiring connection diagram (See page 15). 2. Make measurement for erase current. 3. Make sure that the measured value is within the erase current of 140 mA to 170 mA. 4. If it is beyond the value, carry out the following adjustments: • If the erase current is less than 140 mA, short the point (A). • If the erase current is more than 170 mA, open the points (A) and (B).
Ⓖ Overall frequency response Condition: * Record/playback mode * Tape selector ··· Normal position ··· CrO_2 position ··· Metal position * Input level controls ··· MAX	**Note :** Before measuring and adjusting, make sure of the playback frequency response (For the method of measurement, please refer to the playback frequency response). **Overall frequency response chart (Normal)**  **Fig. 11**

ITEM	MEASUREMENT & ADJUSTMENT

Equipment
* VTVM * AF oscillator
* ATT * Oscilloscope
* Resistor (600Ω)
* Test tape
(reference blank tape)
···QZZCRA for Normal
···QZZCRX for CrO_2
···QZZCRZ for Metal

Overall frequency response adjustment by recording bias current

Note 1:
On RS-M216, overall frequency response is adjusted with tape selector set at Normal.

Note 2:
Recording equalizer is fixed.

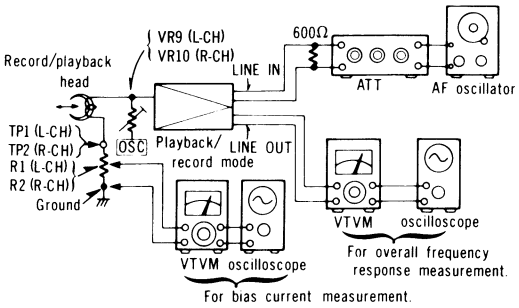


Fig. 12

1. Make connections as shown in fig. 12.
2. Input a 1 kHz, −24 dB signal through LINE IN. Place the set in record mode.
3. Fine adjust the attenuator to obtain 0.4 V LINE OUT output.
   * Make sure that the input signal level is −24 ± 4 dB with 0.4 V output voltage.
4. Set the tape selector to Normal, and load the test tape (QZZCRA).
5. Adjust the attenuator to reduce the input signal level by 20 dB.
6. Adjust the AF oscillator to generate 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 4 kHz, 8 kHz and 10 kHz signals, and record these signals on the test tape.
7. Playback the signals recorded in step 6, and check if the frequency response curve is within the limits shown in the overall frequency response chart for normal tapes (fig. 11).
   (If the curve is within the charted specifications, proceed to steps 8, 9 and 10.)
   If the curve is not within the charted specifications, adjust as follows;

Adjustment Ⓐ:
When the curve exceeds the overall frequency response chart specifications (fig. 11) as shown in fig. 13.

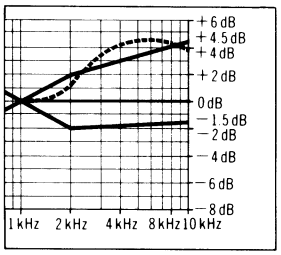


Fig. 13

1) Increase bias current by turning VR1 (L-CH) and VR10 (R-CH). (See fig. 1 on page 4).
2) Repeat steps 6 and 7 to confirm. (Proceed to steps 8, 9 and 10 if the curve is now within the charted specifications in fig. 11.)
3) If the curve still exceeds the specifications (fig. 11), increase bias current further and repeat steps 6 and 7.

Adjustment Ⓑ:
When the curve falls below the overall frequency response chart specifications (fig. 11) as shown in fig. 14.

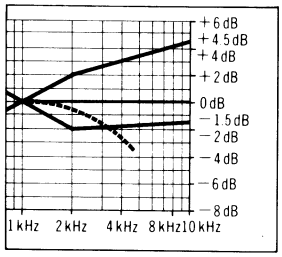


Fig. 14

1) Reduce bias current by turning VR9 (L-CH) and VR10 (R-CH).
2) Repeat steps 6 and 7 to confirm. (Proceed to steps 8, 9 and 10 if the curve is now within the charted specifications in fig. 11.)
3) If the curve still falls below the charted specifications (fig. 11), reduce bias current further and repeat steps 6 and 7.

8. Switch the tape selector to CrO_2, change test tape to QZZCRX, and record 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 4 kHz, 8 kHz, 10 kHz and 12.5 kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for CrO_2 tapes (fig. 15).

Overall frequency response chart (CrO_2, Metal)

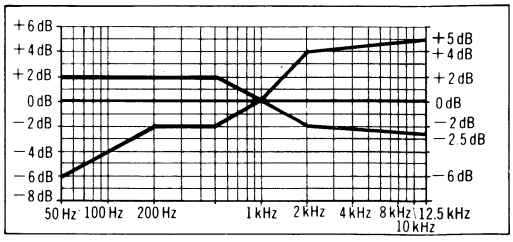
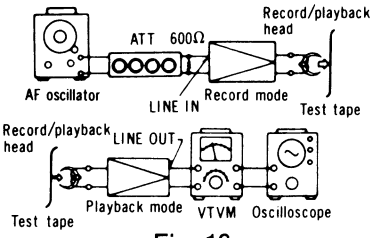
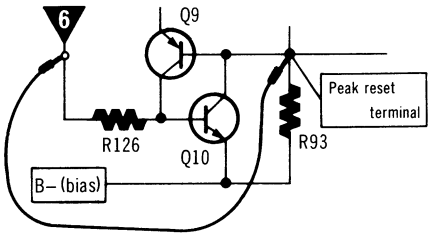
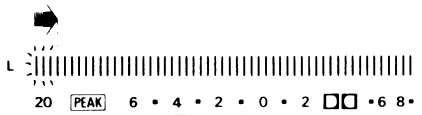
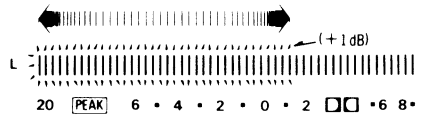
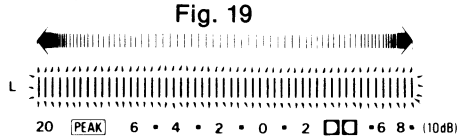
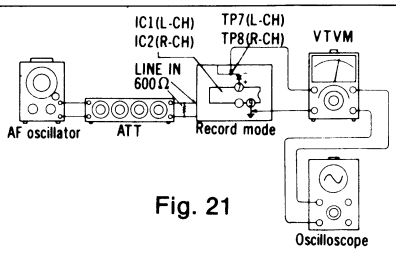
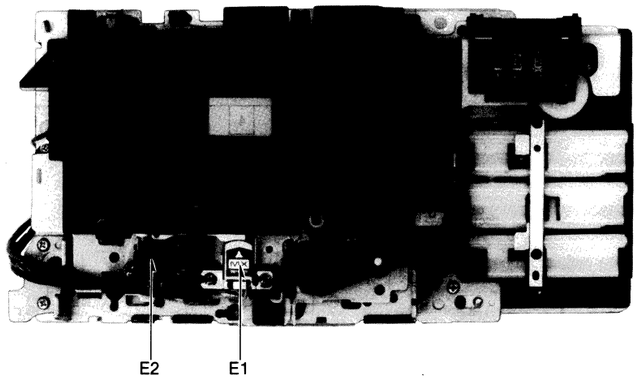


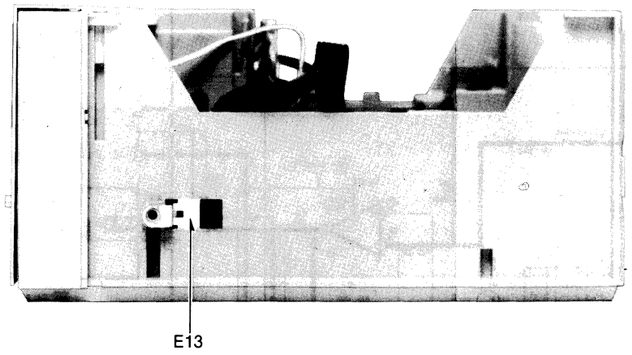
Fig. 15

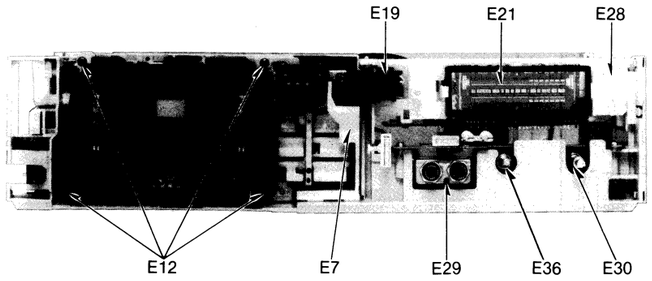
9. Switch the tape selector to Metal, change test tape to QZZCRZ, and record 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 4 kHz, 8 kHz, 10 kHz and 12.5 kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for metal tapes (fig. 15).

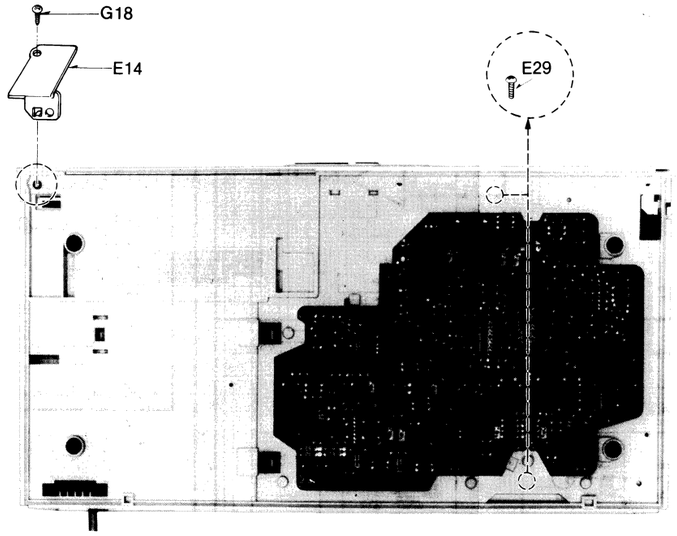
ITEM	MEASUREMENT & ADJUSTMENT
	10. Confirm that bias currents are approximately as follows when the tape selector is set at different positions. * Read voltage on VTVM and calculate bias current by following formula: $\text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10\ (\Omega)}$ around 410μA (Normal position) around 545μA (CrO_2 position) around 800μA (Metal position) } : measured at TP1 (L-CH) and TP2 (R-CH)
❽ Overall gain Condition: * Record/playback mode * Tape selector ····· Normal position * Input level controls ··· MAX * Standard input level; MIC ····· −72 ± 4 dB LINE IN ··· −24 ± 4 dB Equipment: * VTVM * AF oscillator * ATT * Oscilloscope * Resistor (600 Ω) * Test tape (reference blank tape) ··· QZZCRA for Normal	1. Test equipment connection is shown in fig. 16. 2. Place UNIT into record mode, and tape selector to normal position. 3. Supply 1 kHz signal (−24 dB) from AF oscillator, through ATT to LINE IN. 4. Adjust ATT until monitor level at LINE OUT becomes 0.4 V. 5. Using test tape, make recording. 6. Playback recorded tape, and make sure the value at LINE OUT on VTVM becomes 0.4 V. 7. If measured value is not 0.4 V, adjust VR5 (L-CH), VR6 (R-CH) (See fig. 1 on page 4.) 8. Repeat from step (2).  Fig. 16
❶ Fluorescent meter Condition: * Record mode * Tape selector ····· Normal position * Input level controls ··· MAX Equipment: * VTVM * AF oscillator * ATT	1. Test equipment connection is shown in fig. 16. 2. As shown in fig. 17, connect the collector of Q9 and peak reset terminal. 3. Supply 1 kHz signal (−24 dB) to the LINE IN jack, then press the record button. 4. Adjust the ATT so that the output level at LINE OUT jack becomes 0.4 V (The input level at this condition is termed the standard input level). 5. Adjustment at "−20 dB": A. Adjust the ATT so that input level is −20 dB below standard recording level. B. Adjust VR7 so that the −20 dB segment lights up in the −20 ± 1 dB range (L-CH ONLY) (See fig. 18). 6. Adjustment at "0 dB": A. Adjust the ATT so that the output level at LINE OUT jack becomes 0.4 V. (The input level at this condition is termed the standard input level.) B. Adjust VR8 so that the +1 dB segment lights up in the 0 ± 0.2 dB range of the standard input level (See fig. 19). 7. Repeat twice between steps 5 and 6 above. 8. Adjust ATT and check that all segments light up when an input signal level is increased to 10 dB higher than the standard input level (See fig. 20).  Fig. 17  Fig. 18  Fig. 19  Fig. 20
❷ Dolby NR circuit Condition: * Record mode * Dolby NR switch ··· IN/OUT * Input level controls ··· MAX Equipment: * VTVM * AF oscillator * ATT * Oscilloscope * Resistor (600 Ω)	1. Test equipment connection is shown in fig. 21. 2. Place UNIT into record mode, set the Dolby NR switch to OUT position and supply to LINE IN to obtain −34.5 dB at TP7 (L-CH), TP8 (R-CH) (frequency 5 kHz). 3. Confirm that the value at IN position is 8 (± 2.5) dB greater than the value at OUT position of Dolby NR switch.  Fig. 21

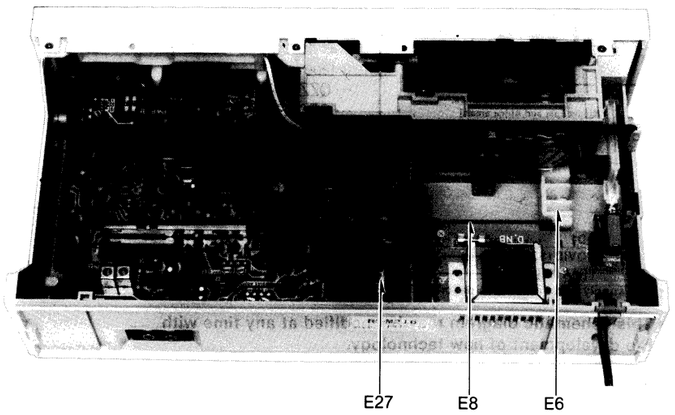
ELECTRICAL PARTS LOCATION

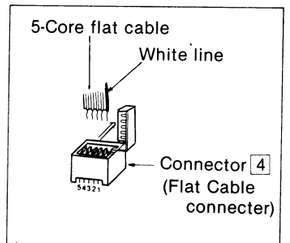




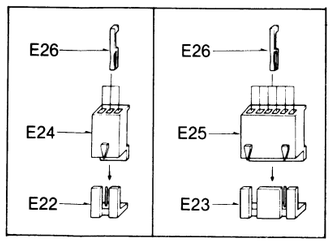




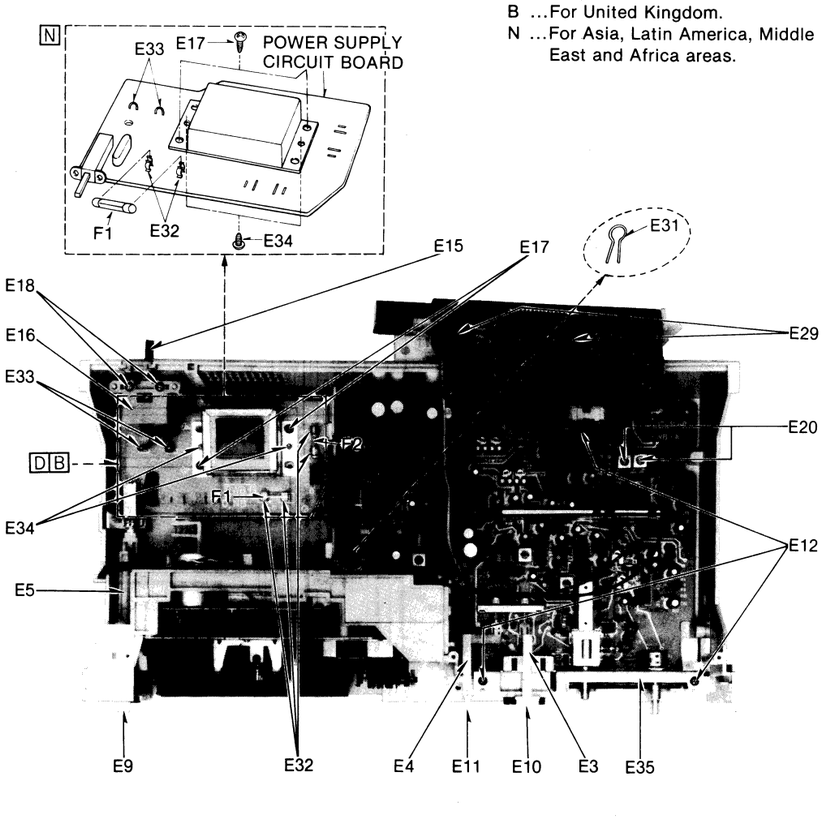




Open the lid of connector 4 in the direction of the arrow as shown above, and extract the 5-Core flat cable to disconnect.



NOTES:
- D ...For all European areas except United Kingdom.
- B ...For United Kingdom.
- N ...For Asia, Latin America, Middle East and Africa areas.

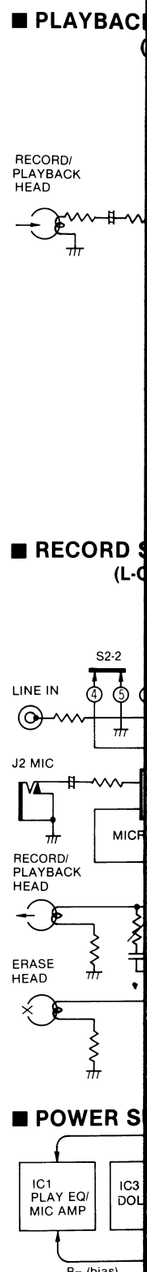


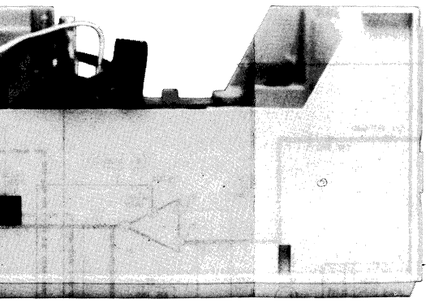
REPLACEMENT PARTS LIST

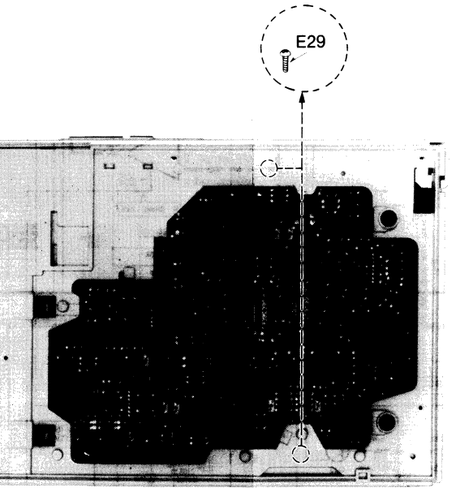
Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

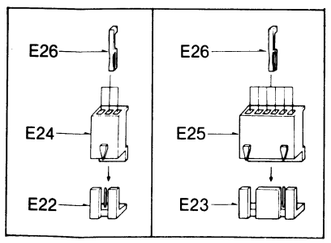
Ref No.	Part No.	Part Name & Description
	ELECTRICAL PARTS	
E 1	QWY4122Z	Record/Playback Head
E 2	QWY2138Z	Erase Head
E 3	QMR2017	Switch Rod-A
E 4	QMR2018	Switch Rod-B
E 5	QMR2019	Switch Rod-C
E 6	QML3907	Record/Playback Lever
E 7	QML3909	Counter Reset Lever
E 8	QBS1139	Record/Playbck Connection Wire
E 9	QGO1900	Power ON/OFF Button
E 10	QGO2051	Push Button-A
E 11	QGO2052	Push Button-B
E 12	XTN3+10B	Tapping Screw ⊕3×10
E 13	QJC0054	Earth Plate-A
E 14	QJC0057	Erath Plate-C
E 15 [D]	⚠SJA88	AC Power Cord
	[For all European areas except United Kingdom.]	
[B]	⚠QFC1205	AC Power Cord
	[For United Kingdom.]	
[N]	⚠PJA52ZB-K	AC Power Cord
	[For Asia, Latin America, Middle East and Africa areas.]	
E 16 [DB]	QKJ0550K	Cord Clamper
	[For all European areas.]	
[N]	QKJ0552K	Cord Clamper
	[For Asia, Latin America, Middle East and Africa areas.]	

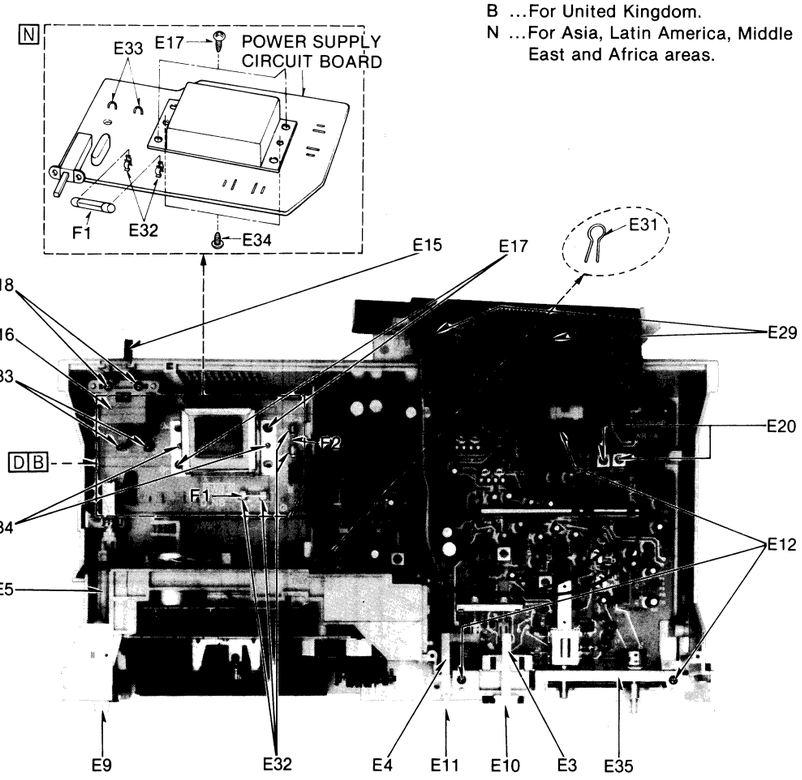
Ref No.	Part No.	Part Name & Description
E 17	XTN3+10B	Tapping Screw ⊕3×10
E 18	XTN3+20B	Tapping Screw ⊕3×20
E 19	QKJ0549	LED Holder
E 20	QTS1532	Shield Plate
E 21	QSiFL006F	FL Meter
E 22	QJP1921TN	3 Pin Post
E 23	QJP1922TN	6 Pin Post
E 24	QJS1921TN	3 Pin Socket
E 25	QJS1922TN	6 Pin Socket
E 26	QJT1054	Contack
E 27	QJS1961S	Flat Cable Connector
E 28	QKJ0548	Meter Holder
E 29	XTN3+10B	Tapping Screw ⊕3×10
E 30	XNS9	Nut 9φ
E 31	QJT1090	Pin Terminal-A
E 32 [DB]	⚠QTF1054	Fuse Holder
	[For all European areas.]	
[N]	⚠QTF1060	Fuse Holder
	[For Asia, Latin America, Middle East and Africa areas.]	
E 33	SJT777	Pin Terminal-B
E 34	XTN3+8B	Tapping Screw ⊕3×8
E 35	QMA4440	Volume Angle
E 36	XNS8	Nut 8φ











NOTES:

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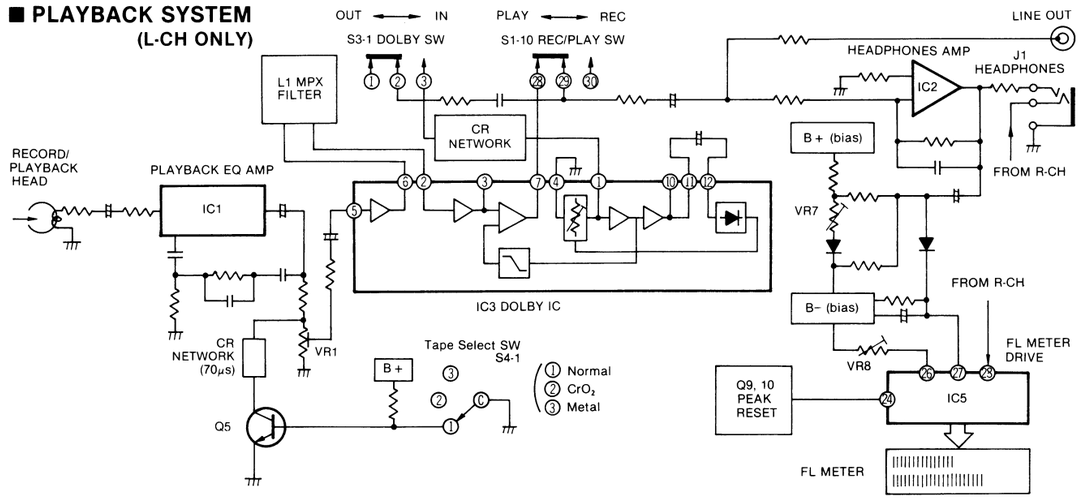
E 4	QMR2018	Switch Rod-B
E 5	QMR2019	Switch Rod-C
E 6	QML3907	Record/Playback Lever
E 7	QML3909	Counter Reset Lever
E 8	QBS1139	Record/Playbck Connection Wire
E 9	QGO1900	Power ON/OFF Button
E 10	QGO2051	Push Button-A
E 11	QGO2052	Push Button-B
E 12	XTN3+10B	Tapping Screw ⊕3×10
E 13	QJC0054	Earth Plate-A
E 14	QJC0057	Erath Plate-C
E 15 [D]	⚠SJA88	AC Power Cord
	[For all European areas except United Kingdom.]	
[B]	⚠QFC1205	AC Power Cord
	[For United Kingdom.]	
[N]	⚠PJA52ZB-K	AC Power Cord
	[For Asia, Latin America, Middle East and Africa areas.]	
E 16 [DB]	QKJ0550K	Cord Clamper
	[For all European areas.]	
[N]	QKJ0552K	Cord Clamper
	[For Asia, Latin America, Middle East and Africa areas.]	

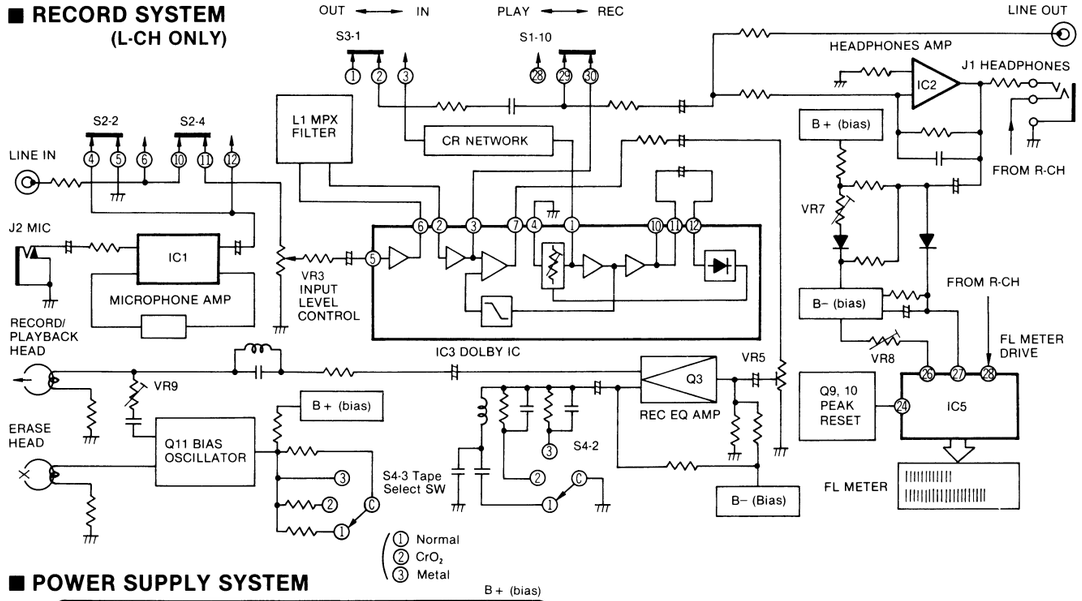
Ref No.	Part No.	Part Name & Description
E 17	XTN3+10B	Tapping Screw ⊕3×10
E 18	XTN3+20B	Tapping Screw ⊕3×20
E 19	QKJ0549	LED Holder
E 20	QTS1532	Shield Plate
E 21	QSiFL006F	FL Meter
E 22	QJP1921TN	3 Pin Post
E 23	QJP1922TN	6 Pin Post
E 24	QJS1921TN	3 Pin Socket
E 25	QJS1922TN	6 Pin Socket
E 26	QJT1054	Contack
E 27	QJS1961S	Flat Cable Connector
E 28	QKJ0548	Meter Holder
E 29	XTN3+10B	Tapping Screw ⊕3×10
E 30	XNS9	Nut 9ϕ
E 31	QJT1090	Pin Terminal-A
E 32 [DB]	⚠QTF1054	Fuse Holder
	[For all European areas.]	
[N]	⚠QTF1060	Fuse Holder
	[For Asia, Latin America, Middle East and Africa areas.]	
E 33	SJT777	Pin Terminal-B
E 34	XTN3+8B	Tapping Screw ⊕3×8
E 35	QMA4440	Volume Angle
E 36	XNS8	Nut 8ϕ

BLOCK DIAGRAM

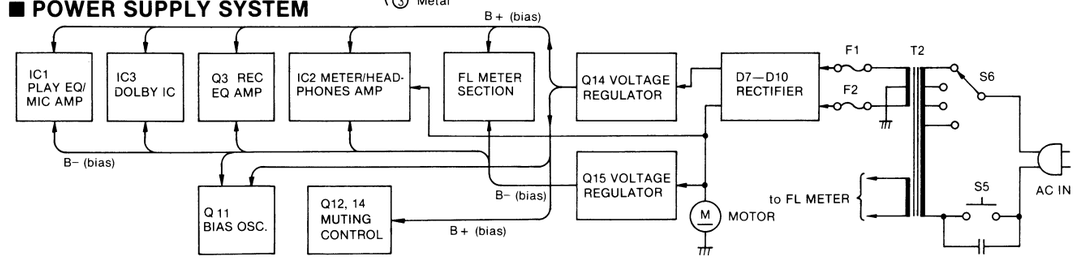
■ PLAYBACK SYSTEM (L-CH ONLY)



■ RECORD SYSTEM (L-CH ONLY)



■ POWER SUPPLY SYSTEM



NOTES: RESISTORS

- ERD .....Carbon
- ERG .....Metal-oxide
- ERS .....Metal-oxide
- ERO .....Metal-film
- ERX .....Metal-film
- ERQ .....Fuse type metallic
- ERC .....Solid
- ERF .....Cement

CAPACITORS

- ECBA .....Ceramic
- ECG□.....Ceramic
- ECK□.....Ceramic
- ECC□.....Ceramic
- ECF□.....Ceramic
- ECQM.....Polyester film
- ECQE .....Polyester film
- ECQF .....Polypropylene
- ECE□.....Electrolytic
- ECE□N ...Non polar electrolytic
- ECQS .....Polystyrene
- ECS□.....Tantalum
- QCS .....Tantalum

REPLACEMENT PARTS LIST

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RESISTORS

Ref No.	Part No.
R 1, 2	ERD25FJ100
R 5 (100KΩ)	refer to Z 1
R 6 (100KΩ)	refer to Z 2
R 7, 8	ERD25FJ101
R 9, 10	ERD25TJ184
R 11, 12	ERD25FJ101
R 13 (10KΩ)	refer to Z 3
R 14 (10KΩ)	refer to Z 4
R 15, 16	ERD25TJ333
R 19, 20	ERD25FJ102
R 25	ERD25FJ102
R 27, 28	ERD25TJ105
R 29, 30	ERD25FJ332
R 31, 32	ERD25FJ181
R 33, 34	ERD25TJ473
R 41, 42	ERD25FJ272
R 43, 44	ERD25FJ122
R 47, 48	ERD25TJ224
R 49, 50	ERD25TJ683
R 51, 52	ERD25FJ822
R 53 ,54	ERD25FJ821
R 55, 56	ERD25FJ332
R 57, 58	ERD25FJ122
R 61, 62	ERD25FJ6R8
R 69, 70	ERD25TJ333
R 73, 74	ERD25FJ151
R 75 (120KΩ)	refer to Z 5
R 76 (120KΩ)	refer to Z 6
R 79, 80 [DB]	ERD50FJ820
[For all European areas.] [N]	ERD25FJ820
[For Asia, Latin America, Middle East and Africa areas.] R 83, 84	ERD25TJ473
R 85, 86	ERD25TJ683
R 87, 88	ERD25TJ105
R 92	ERD25TJ684
R 97 [N]	ERD25FJ181
[For Asia, Latin America, Middle East and Africa areas.] R 98, 98	ERD25FJ103
R 99, 100	ERD25FJ181
R 101	ERD25FJ100
R 102, 103	ERD25FJ562
R 104	ERD25FJ100
R 105	ERD25FJ331
R 106	ERD25FJ391
R 107, 108	ERD25FJ101
R 109	ERD50FJ121
R 110	ERD25FJ102
R 116, 117⚠	ERD25FJ681
R 118	ERD25FJ1R0
R 123	ERD25FJ472

VARIABLE RESISTORS

Ref No.	Part No.
VR 1	EWJS3AF22A24
VR 2	EWJS3AF22A24
VR 3, 4	EVNM4AA00B24
VR 5, 6	EVNM4AA00B54
VR 7	EVNM4AA00B14
VR 8	EVNM4AA00B24
VR 9	EVNM4AA00B25
VR 10	EVNM4AA00B25

CAPACITORS

Ref No.	Part No.
C 1, 2	ECBA1H102KBY
C 3, 4	ECEA25Z4R7
C 5 (390pF)	refer to Z 1
C 6 (390pF)	refer to Z 2
C 7, 8	ECKD1H102MD
C 9, 10	ECEA1AS101
C 11 (390pF)	refer to Z 3
C 12 (390pF)	refer to Z 4
C 13, 14	ECQM1H123JZ
C 15, 16	ECEA1HS100
C 17	ECKD1H682MD
C 18	ECKD1H682MD
C 19, 20	ECQM1H123JZ
C 21, 22	ECEA1HN010
C 23	ECEA1AS331
C 24	ECEA1AS102
C 25, 26	ECEA1HSR33
C 27, 28	ECQM1H273JZ
C 29, 30	ECQM1H472JZ
C 31, 32	ECEA1HS100
C 33, 34	ECQM1H562JZ
C 35, 36	ECQM1H392JZ
C 37, 38	ECQM1H104JZ
C 39, 40	ECEA1HS100
C 41, 42	ECQM1H473JZ
C 43	ECKD1H223ZF
C 45, 46	ECKD2H121KB
C 47, 48	ECEA1HS100
C 49, 50	ECEA50Z3R3
C 51, 52	ECEA50Z2R2
C 53, 54	ECEA50Z1
C 55, 56	ECEA1HS100
C 57, 58	ECBA1H102KBY
C 59, 60	ECQM1H273JZ
C 61, 62	ECQM1H153JZ
C 63, 64	ECFDD223KXY
C 65, 66	ECFDD273KXY
C 67, 68	ECEA1HN010
C 71 (22pF)	refer to Z 5
C 72 (22pF)	refer to Z 6
C 73, 74	ECBA1C103NYY
C 75, 76, 77, 78	ECEA50Z1
C 79	ECEA1HS100
C 80	ECFDD473KXY
C 81	ECBA1C103NYY
C 82	ECBA1H102KBY
C 100	ECQP1183JZ
C 101, 102	ECBA1H101JL
C 103	ECEA1ES101
C 104	ECQM1H153JZ
C 105	ECQM1H822JZ
C 108, 109	ECEA1CS331
C 110, 111 ⚠	ECEA1CS102
C 112 ⚠	ECKD2H472PE
C 113	ECEA50Z3R3
C 200 ⚠	ECQU2A103MF

COMBINATION PARTS

Ref No.	Part No.
Z 1 (R 5 and C 5)	EXRP391K104T
Z 2 (R 6 and C 6)	EXRP391K104T
Z 3 (R 13 and C 11)	EXRP391K103T
Z 4 (R 14 and C 12)	EXRP391K103T
Z 5 (R 75 and C 71)	EXRP220K124T
Z 6 (R 76 and C 72)	EXRP220K124T

TRANSISTORS

Ref No.	Part No.
Q 1, 2, 3, 4, 5, 6, 7, 8	2SC1685Q
Q 9	2SA564
Q 10	2SC1685Q
Q 11	2SD592
Q 12	2SC1685Q
Q 13	2SA564
Q 14	2SC1846
Q 15	2SA885

DIODES & RECTIFIERS

Ref No.	Part No.
D 1, 2, 3	MA161
D 4 [DB]	MA1047
[For all European areas.] D 5	LN216RP
D 6	MA1220M
D 7, 8, 9, 10 ⚠	SM112

INEGRATED CIRCUITS

Ref No.	Part No.
IC 1	M5219L
IC 2	M5218L
IC 3, 4	NE646N
IC 5	AN6870N

COILS

Ref No.	Part No.	Part Name & Description
L 1, 2	QLM9Z9K	MPX Coil
L 3, 4	QLQX2721D	Peaking Coil
L 5, 6	QLQX0343KWA	Bias Trap Coil

TRANSFORMERS

Ref No.	Part No.	Part Name & Description
T 1	QLB0198K	Bias Oscillation Coil
T 2 [D]⚠	QLPD68EKC	AC Power Transformer
[For all European areas except United Kingdom.] [B]⚠	QLPA65EKC	AC Power Transformer
[For United Kingdom.] [N]⚠	QLPAN73EKC	AC Power Transformer
[For Asia, Latin America, Middle East and Africa areas.]		

FUSES

Ref No.	Part No.	Part Name & Description
F 1 [DB]⚠	XBAQ0007	Fuse (T 400mA)
[For all European areas.] [N]⚠	XBA2E03NS5	Fuse (500mA)
[For Asia, Latin America, Middle East and Africa areas.] F 2 [DB]⚠	XBAQ0007	Fuse (T 400mA)
[For all European areas.)		

SWITCHES

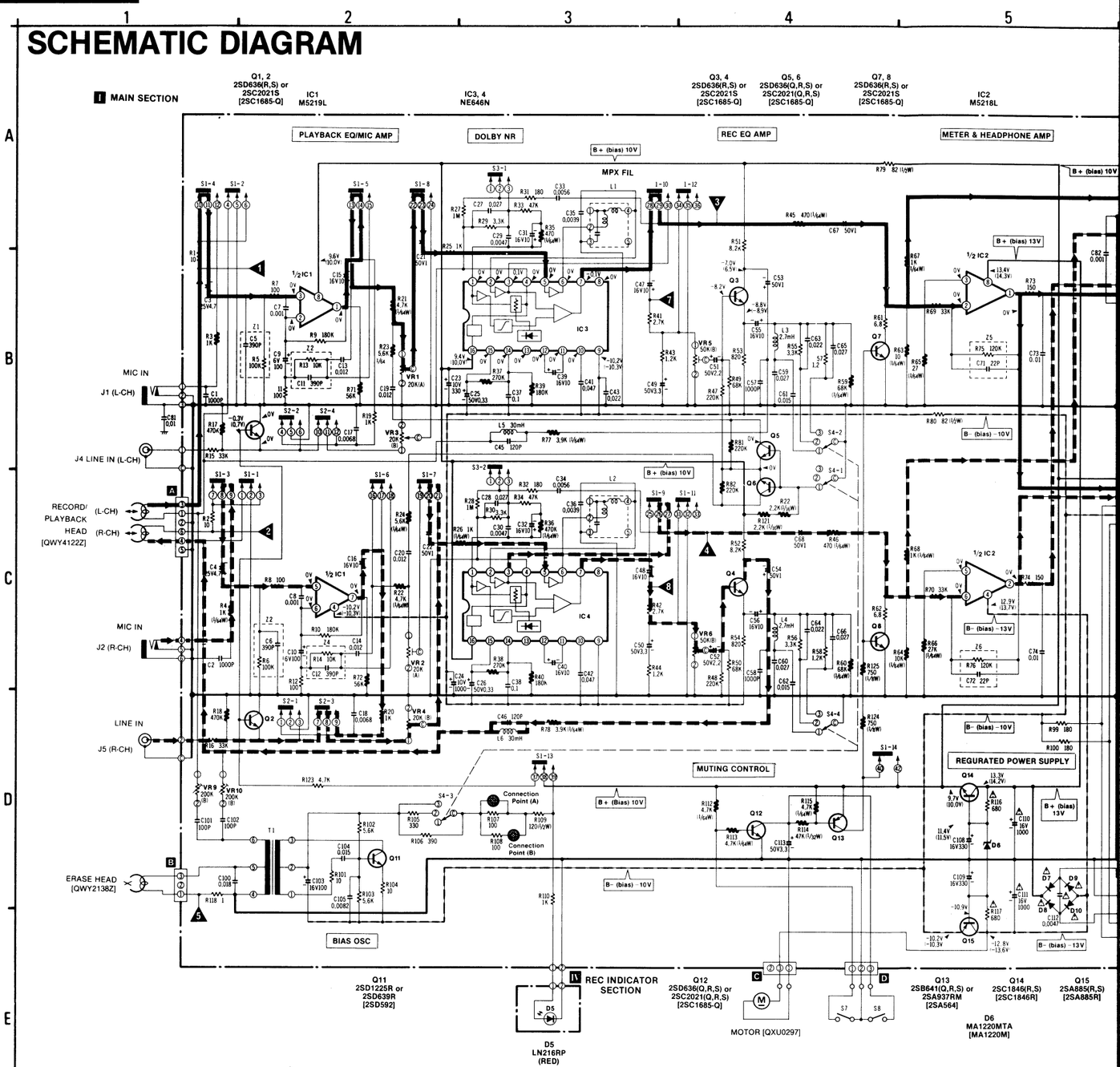
Ref No.	Part No.	Part Name & Description
S 1	QSSE203	Slide Switch (Record/Playback Selector)
S 2, 3	QSWX208	Switch (Input Selector/Dolby NR)
S 4	QSR4306	Rotary Switch (Tape Selector)
S 5 ⚠	ESB822S	Push Switch (Power ON/OFF)
S 6 [N] ⚠	QSR1401H	Rotary Switch (AC Power Voltage Selector)
[For Asia, Latin America, Middle East and Africa areas.] S 7, 8	QSB0251	Leaf Switch (Play/Fast Wind SW)

JACKS

Ref No.	Part No.	Part Name & Description
J 1, 2	QJA0451	Microphone Jack
J 3	QJA0259	Headphones Jack
J 4, 5, 6, 7	QEJ5028S	Jackboard (Line IN/OUT)

RS-M216

SCHEMATIC DIAGRAM



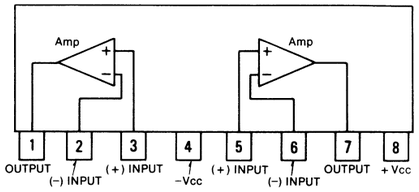
NOTES:

- S1-1—S1-14.....Record/Playback select switch (shown in playback position).
- S2-1—S2-4 .....Input select switch (shown in LINE IN position).
- S3-1, S3-2.....Dolby IN/OUT select switch (shown in OUT position).
- S4-1—S4-5 .....Tape select switch (shown in normal position). (①..Normal, ②..CrO_2, ③...Metal)
- S5.....Power ON/OFF switch (shown in OFF position).
- S6.....[N] AC power voltage select switch. * For Asia, Latin America, Middle East and Africa areas.
- S7.....Playback muting switch (shown in off position).
- S8.....Fast wind muting switch (shown in off position).
- VR1, 2 .....Playback gain adjustment VR.
- VR3, 4 .....Input level controls.
- VR5, 6 .....Recording gain adjustment VR.
- VR7 .....FL meter adjustment VR (for −20dB indication).
- VR8 .....FL meter adjustment VR (for 0dB indication).
- VR9, 10 .....Bias current adjustment VR.
- Connection points (A) and (B).....For erase current adjustment.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise. K = 1,000Ω, M = 1,000KΩ.
- ( ) indicates printed resistor. A printed resistor is printed on the printed circuit board to be part of printed patterns for circuit configuration.
- Capacity are in microfarads (μF) unless specified otherwise. P = Pico-farads.
- The mark '(▼) shows test point. e.g. ▼ = Test point 1.
- ( ) this arrow indicates the flow of the playback signal.
- ( ) this arrow indicates the flow of the recording signal.
- Important safety notice Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- All voltage values shown in circuitry are
  Unless otherwise specified, voltage mea
  travels is at STOP, tape mode at NORM
  REC .....Voltage at record mode
  PLAY .....Voltage at playback mo
  REC/PLAY .....Voltage at record/playba
  Normal .....Voltage at Normal tape
  CrO_2 .....Voltage at CrO_2 tape mo
  Metal .....Voltage at Metal tape m
- Described in the schematic diagram are parts number and production parts num
  One type of number is used for supply p number when they are idential.
  e.g. Q1
  [2SB745(TMG, UMG)——Produc
  [2SB745T] ——Supply

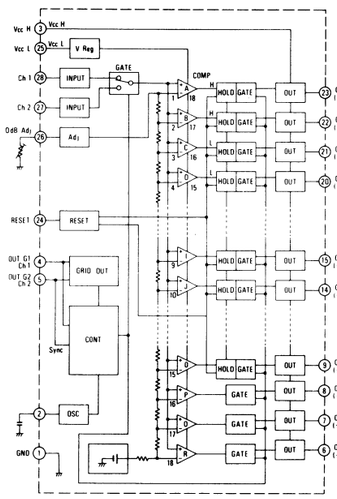
SCHEMATIC DIAGRAM

EQUIVALENT CIRCUIT

IC1 M5219L
IC2 M5218L



IC5 AN6870N



Q5, 6 [2SC1685-Q]

		E	C	B
PLAY	Normal	0V	0V	0.7V
	CrO_2			0.4V
	Metal			0.7V
REC	Normal	0V	0V	0V
	CrO_2			0.4V
	Metal			0.7V

Q7, 8

	E	C	B
PLAY	0V	0V	0.3V
REC	0V	0V	0.4V
STOP	0V	0V	0.7V

Q11

	E	C	B
PLAY	10.3V	10.3V	10.3V
Normal REC	9.7V	3.5V	10.0V
Metal REC	9.6V	3.4V	9.7V

Q12

	E	C	B
PLAY	0V	9.9V	0V
REC	0V	9.6V	0V
STOP	0V	0V	0.7V

Q13

	E	C	B
PLAY	10.0V	0.4V	9.9V
REC	9.6V	0.4V	9.6V
STOP	9.1V	9.8V	9.1V

IC5 [AN6870N]

1	–10.2V (–10.3V)	8	–10.2V	15	–10.2V	22	–10.2V
2	–7.8V	9	–10.2V	16	–10.2V	23	–10.2V
3	9.6V (10.0V)	10	–10.2V	17	–10.2V	24	–5.8V (–5.7V)
4	–0.9V (–0.7V)	11	–10.2V	18	–10.2V	25	–4.2V (–4.8V)
5	–0.9V (–0.7V)	12	–10.2V	19	–10.2V	26	–6.2V
6	–10.2V	13	–10.2V	20	–10.2V	27	–8.4V
7	–10.2V	14	–10.2V	21	–10.2V	28	–8.4V

SPECIFICATIONS

* Input level controls···MAX.

Playback S/N ratio Test tape ··· QZZCFM	Greater than 45 dB (without NAB filter)
Overall distortion Test tape ··· QZZCRA for Normal ··· QZZCRX for CrO_2 ··· QZZCRZ for Metal	Less than 4%
Overall S/N ratio Test tape ··· QZZCRA	Greater than 43 dB

NOTES:

- S1-1—S1-14.....Record/Playback select switch (shown in playback position).
- S2-1—S2-4 .....Input select switch (shown in LINE IN position).
- S3-1, S3-2.....Dolby IN/OUT select switch (shown in OUT position).
- S4-1—S4-5 .....Tape select switch (shown in normal position).
  (① ..Normal, ② ..CrO_2, ③...Metal)
- S5.....Power ON/OFF switch (shown in OFF position).
- S6.....[N] AC power voltage select switch.
  * For Asia, Latin America, Middle East and Africa areas.
- S7.....Playback muting switch (shown in off position).
- S8.....Fast wind muting switch (shown in off position).
- VR1, 2 .....Playback gain adjustment VR.
- VR3, 4 .....Input level controls.
- VR5, 6 .....Recording gain adjustment VR.
- VR7 .....FL meter adjustment VR (for –20dB indication).
- VR8 .....FL meter adjustment VR (for 0dB indication).
- VR9, 10 .....Bias current adjustment VR.
- Connection points (A) and (B).....For erase current adjustment.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
  K = 1,000Ω, M = 1,000KΩ.
- ( ) indicates printed resistor.
  A printed resistor is printed on the printed circuit board to be part of printed patterns for circuit configuration.
- Capacity are in microfarads (μF) unless specified otherwise.
  P = Pico-farads.
- The mark (▼) shows test point. e.g. ▼ = Test point 1.
- ( ) this arrow indicates the flow of the playback signal.
- ( ) this arrow indicates the flow of the recording signal.
- Important safety notice
  Components identified by △ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- All voltage values shown in circuitry are under no signal condition.
  Unless otherwise specified, voltage measurement conditions are that tape travels is at STOP, tape mode at NORMAL, and Dolby NR switch at OFF.
  REC .....Voltage at record mode.
  PLAY .....Voltage at playback mode.
  REC/PLAY .....Voltage at record/playback mode.
  Normal .....Voltage at Normal tape mode.
  CrO_2 .....Voltage at CrO_2 tape mode.
  Metal .....Voltage at Metal tape mode.
- Described in the schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and diodes.
  One type of number is used for supply parts number and production parts number when they are idential.
  e.g. Q1
  {2SB745(TMG, UMG)—Production parts number
  {[2SB745T] —Supply parts number

D1
{QVID1S2473T —Production parts number
{[MA161]—Supply parts number

- **The supply parts number is described alone in the replacement parts list.**

- **This schematic diagram may be modified at any time with the development of new technology.**

NOTES: RESISTORS

ERD .....Carbon
ERG .....Metal-oxide
ERS .....Metal-oxide
ERO .....Metal-film
ERX .....Metal-film
ERQ .....Fuse type metallic
ERC .....Solid
ERF .....Cement

CAPACITORS

ECBA .....Ceramic
ECG□.....Ceramic
ECK□.....Ceramic
ECC□.....Ceramic
ECF□.....Ceramic
ECQM.....Polyester film
ECQE .....Polyester film
ECQF .....Polypropylene
ECE□.....Electrolytic
ECE□N ...Non polar electrolytic
ECQS .....Polystyrene
ECS□.....Tantalum
QCS .....Tantalum

REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref No.	Part No.
RESISTORS	
R 1, 2	ERD25FJ100
R 5 (100KΩ)	refer to Z 1
R 6 (100KΩ)	refer to Z 2
R 7, 8	ERD25FJ101
R 9, 10	ERD25TJ184
R 11, 12	ERD25FJ101
R 13 (10KΩ)	refer to Z 3
R 14 (10KΩ)	refer to Z 4
R 15, 16	ERD25TJ333
R 19, 20	ERD25FJ102
R 25	ERD25FJ102
R 27, 28	ERD25TJ105
R 29, 30	ERD25FJ332
R 31, 32	ERD25FJ181
R 33, 34	ERD25TJ473
R 41, 42	ERD25FJ272
R 43, 44	ERD25FJ122
R 47, 48	ERD25TJ224
R 49, 50	ERD25TJ683
R 51, 52	ERD25FJ822
R 53 ,54	ERD25FJ821
R 55, 56	ERD25FJ332
R 57, 58	ERD25FJ122
R 61, 62	ERD25FJ6R8
R 69, 70	ERD25TJ333
R 73, 74	ERD25FJ151
R 75 (120KΩ)	refer to Z 5
R 76 (120KΩ)	refer to Z 6
R 79, 80	
[DB]	ERD50FJ820
[For all European areas.]	
[N]	ERD25FJ820
[For Asia, Latin America, Middle East and Africa areas.]	
R 83, 84	ERD25TJ473
R 85, 86	ERD25TJ683
R 87, 88	ERD25TJ105
R 92	ERD25TJ684
R 97 [N]	ERD25FJ181
[For Asia, Latin America, Middle East and Africa areas.]	
R 98, 98	ERD25FJ103
R 99, 100	ERD25FJ181
R 101	ERD25FJ100
R 102, 103	ERD25FJ562
R 104	ERD25FJ100
R 105	ERD25FJ331
R 106	ERD25FJ391
R 107, 108	ERD25FJ101
R 109	ERD50FJ121
R 110	ERD25FJ102
R 116, 117⚠	ERD25FJ681
R 118	ERD25FJ1R0
R 123	ERD25FJ472
VARIABLE RESISTORS	
VR 1	EWJS3AF22A24
VR 2	EWJS3AF22A24
VR 3, 4	EVNM4AA00B24
VR 5, 6	EVNM4AA00B54
VR 7	EVNM4AA00B14
VR 8	EVNM4AA00B24
VR 9	EVNM4AA00B25
VR 10	EVNM4AA00B25

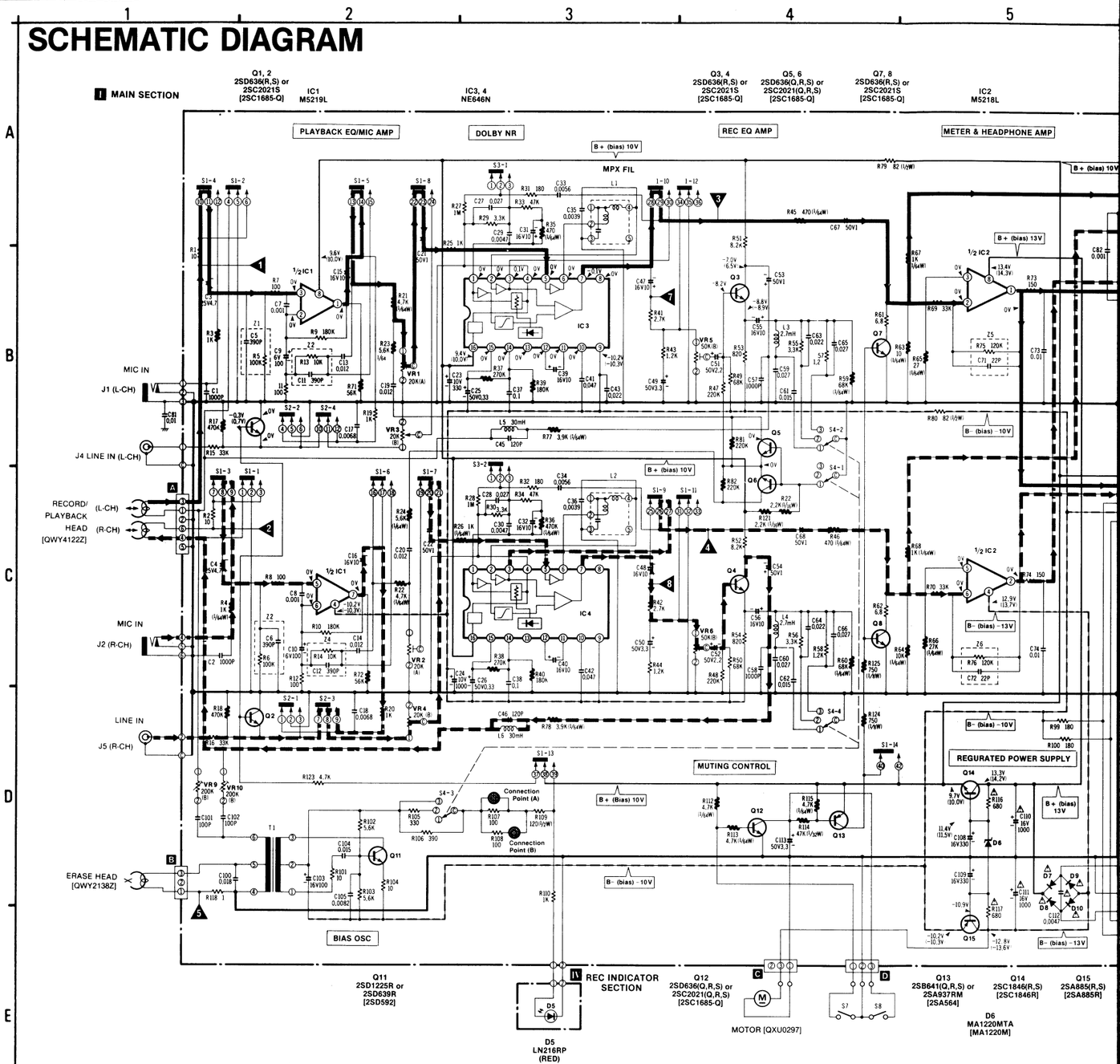
Ref No.	Part No.
CAPACITORS	
C 1, 2	ECBA1H102KBY
C 3, 4	ECEA25Z4R7
C 5 (390pF)	refer to Z 1
C 6 (390pF)	refer to Z 2
C 7, 8	ECKD1H102MD
C 9, 10	ECEA1AS101
C 11 (390pF)	refer to Z 3
C 12 (390pF)	refer to Z 4
C 13, 14	ECQM1H123JZ
C 15, 16	ECEA1HS100
C 17	ECKD1H682MD
C 18	ECKD1H682MD
C 19, 20	ECQM1H123JZ
C 21, 22	ECEA1HN010
C 23	ECEA1AS331
C 24	ECEA1AS102
C 25, 26	ECEA1HSR33
C 27, 28	ECQM1H273JZ
C 29, 30	ECQM1H472JZ
C 31, 32	ECEA1HS100
C 33, 34	ECQM1H562JZ
C 35, 36	ECQM1H392JZ
C 37, 38	ECQM1H104JZ
C 39, 40	ECEA1HS100
C 41, 42	ECQM1H473JZ
C 43	ECKD1H223ZF
C 45, 46	ECKD2H121KB
C 47, 48	ECEA1HS100
C 49, 50	ECEA50Z3R3
C 51, 52	ECEA50Z2R2
C 53, 54	ECEA50Z1
C 55, 56	ECEA1HS100
C 57, 58	ECBA1H102KBY
C 59, 60	ECQM1H273JZ
C 61, 62	ECQM1H153JZ
C 63, 64	ECFDD223KXY
C 65, 66	ECFDD273KXY
C 67, 68	ECEA1HN010
C 71 (22pF)	refer to Z 5
C 72 (22pF)	refer to Z 6
C 73, 74	ECBA1C103NYY
C 75, 76, 77, 78	ECEA50Z1
C 79	ECEA1HS100
C 80	ECFDD473KXY
C 81	ECBA1C103NYY
C 82	ECBA1H102KBY
C 100	ECQP1183JZ
C 101, 102	ECBA1H101JL
C 103	ECEA1ES101
C 104	ECQM1H153JZ
C 105	ECQM1H822JZ
C 108, 109	ECEA1CS331
C 110, 111 ⚠	ECEA1CS102
C 112 ⚠	ECKD2H472PE
C 113	ECEA50Z3R3
C 200 ⚠	ECQU2A103MF
COMBINATION PARTS	
Z 1 (R 5 and C 5)	EXRP391K104T
Z 2 (R 6 and C 6)	EXRP391K104T
Z 3 (R 13 and C 11)	EXRP391K103T
Z 4 (R 14 and C 12)	EXRP391K103T
Z 5 (R 75 and C 71)	EXRP220K124T
Z 6 (R 76 and C 72)	EXRP220K124T
TRANSISTORS	
Q 1, 2, 3, 4, 5, 6, 7, 8	2SC1685Q
Q 9	2SA564
Q 10	2SC1685Q
Q 11	2SD592
Q 12	2SC1685Q
Q 13	2SA564
Q 14	2SC1846
Q 15	2SA885

Ref No.	Part No.
DIODES & RECTIFIERS	
D 1, 2, 3	MA161
D 4 [DB]	MA1047
[For all European areas.]	
D 5	LN216RP
D 6	MA1220M
D 7, 8, 9, 10 ⚠	SM112
INEGRATED CIRCUITS	
IC 1	M5219L
IC 2	M5218L
IC 3, 4	NE646N
IC 5	AN6870N

Ref No.	Part No.	Part Name & Description
COILS		
L 1, 2	QLM9Z9K	MPX Coil
L 3, 4	QLQX2721D	Peaking Coil
L 5, 6	QLQX0343KWA	Bias Trap Coil
TRANSFORMERS		
T 1	QLB0198K	Bias Oscillation Coil
T 2 [D]⚠	QLPD68EKC	AC Power Transformer
[For all European areas except United Kingdom.]		
[B]⚠	QLPA65EKC	AC Power Transformer
[For United Kingdom.]		
[N]⚠	QLPAN73EKC	AC Power Transformer
[For Asia, Latin America, Middle East and Africa areas.]		
FUSES		
F 1 [DB]⚠	XBAQ0007	Fuse (T 400mA)
[For all European areas.]		
[N]⚠	XBA2E03NS5	Fuse (500mA)
[For Asia, Latin America, Middle East and Africa areas.]		
F 2 [DB]⚠	XBAQ0007	Fuse (T 400mA)
[For all European areas.]		
SWITCHES		
S 1	QSSE203	Slide Switch (Record/Playback Selector)
S 2, 3	QSWX208	Switch (Input Selector/Dolby NR)
S 4	QSR4306	Rotary Switch (Tape Selector)
S 5 ⚠	ESB822S	Push Switch (Power ON/OFF)
S 6 [N] ⚠	QSR1401H	Rotary Switch (AC Power Voltage Selector)
[For Asia, Latin America, Middle East and Africa areas.]		
S 7, 8	QSB0251	Leaf Switch (Play/Fast Wind SW)
JACKS		
J 1, 2	QJA0451	Microphone Jack
J 3	QJA0259	Headphones Jack
J 4, 5, 6, 7	QEJ5028S	Jackboard (Line IN/OUT)

RS-M216

SCHEMATIC DIAGRAM



NOTES:

- S1-1—S1-14.....Record/Playback select switch (shown in playback position).
- S2-1—S2-4 .....Input select switch (shown in LINE IN position).
- S3-1, S3-2.....Dolby IN/OUT select switch (shown in OUT position).
- S4-1—S4-5 .....Tape select switch (shown in normal position). (① ..Normal, ② ..CrO_2, ③...Metal)
- S5.....Power ON/OFF switch (shown in OFF position).
- S6.....[N] AC power voltage select switch. * For Asia, Latin America, Middle East and Africa areas.
- S7.....Playback muting switch (shown in off position).
- S8.....Fast wind muting switch (shown in off position).
- VR1, 2 .....Playback gain adjustment VR.
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  Normal .....Voltage at Normal tape
  CrO_2.....Voltage at CrO_2 tape m
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- Described in the schematic diagram are
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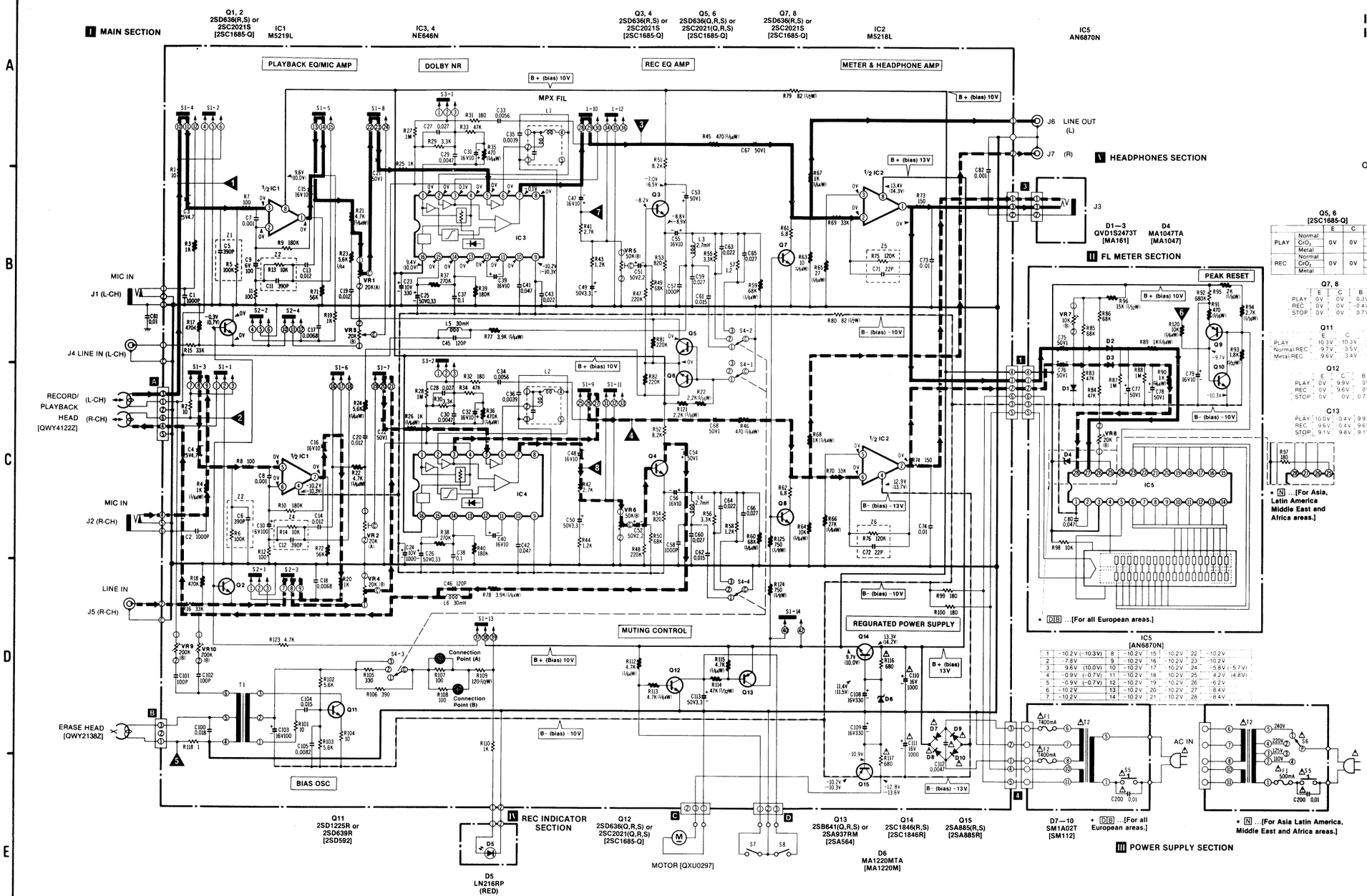
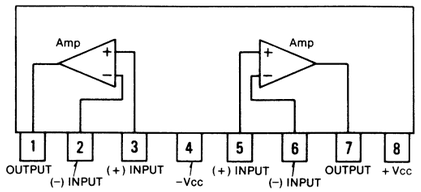
  e.g. Q1
  [2SB745(TMG, UMG)——Produ
  [2SB745T] ——Supply

SCHEMATIC DIAGRAM

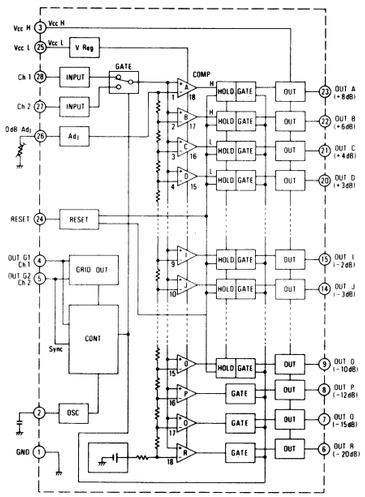


EQUIVALENT CIRCUIT

IC1 M5219L
IC2 M5218L



IC5 AN6870N



SPECIFICATIONS

* Input level controls···MAX.

Playback S/N ratio Test tape ··· QZZCFM	Greater than 45dB (without NAB filter)
Overall distortion Test tape ··· QZZCRA for Normal ··· QZZCRX for CrO_2 ··· QZZCRZ for Metal	Less than 4%
Overall S/N ratio Test tape ··· QZZCRA	Greater than 43dB

NOTES:

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  PLAY .....Voltage at playback mode.
  REC/PLAY .....Voltage at record/playback mode.
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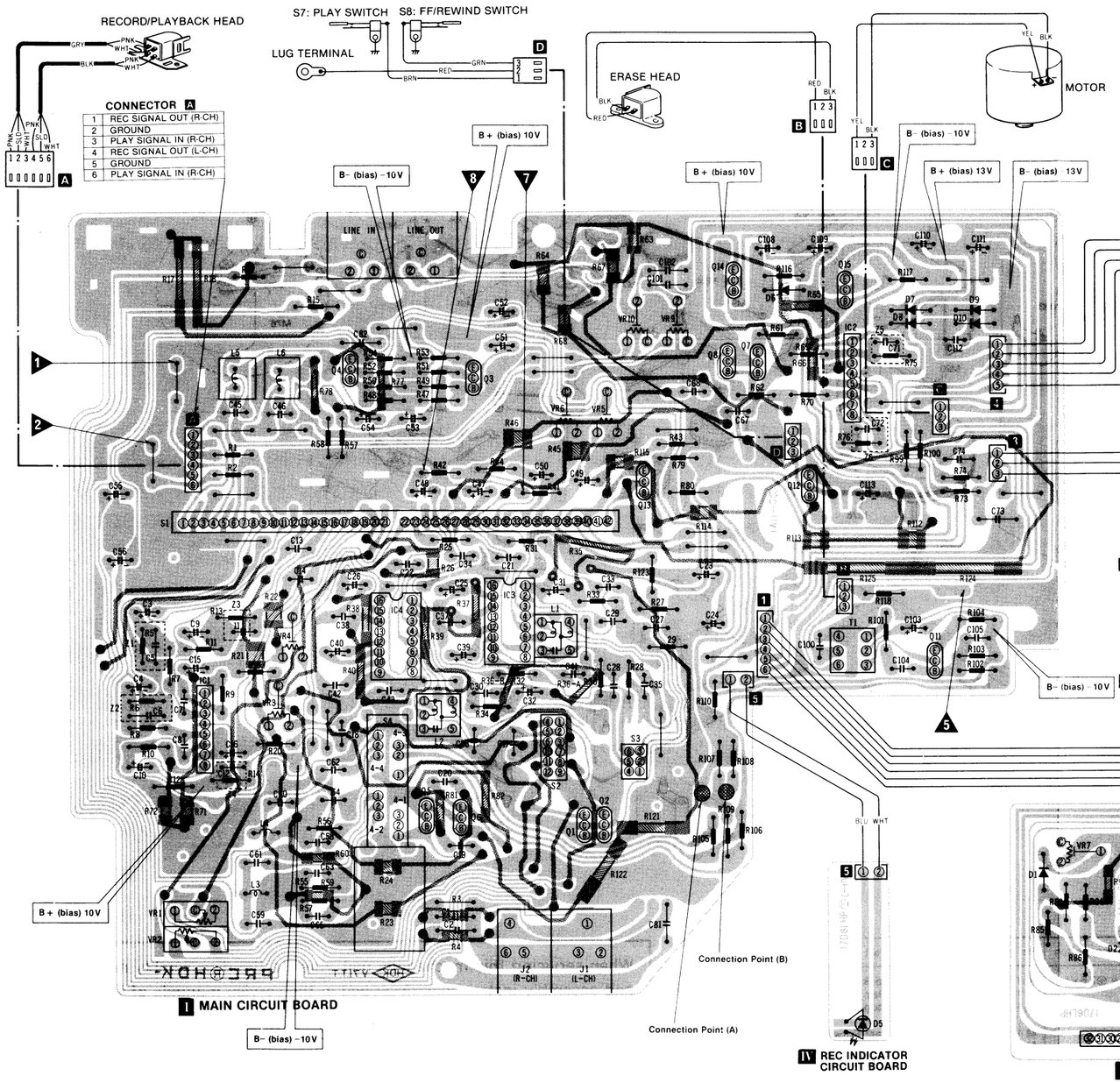
  { 2SB745(TMG, UMG)——Production parts number
  { [2SB745T] ——Supply parts number

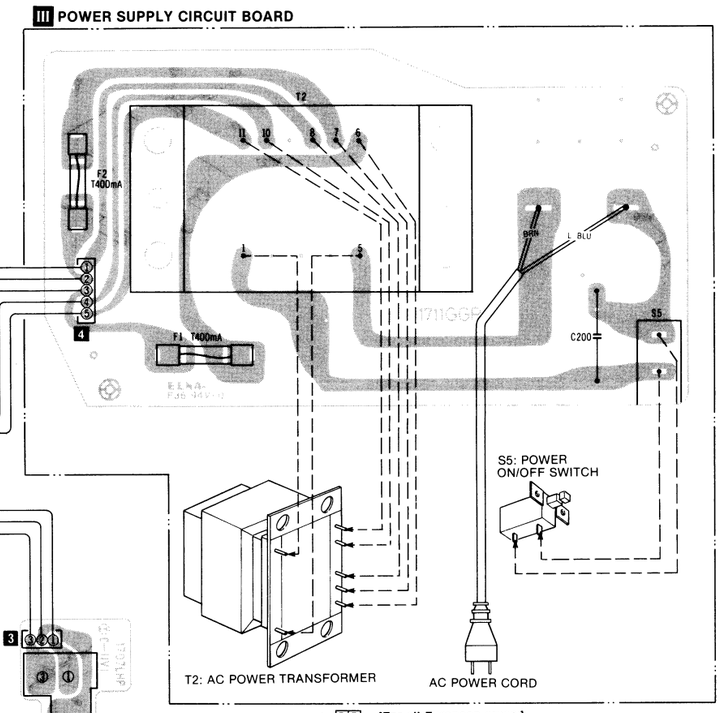
D1
{ QVID1S2473T ——Production parts number
{ [MA161]——Supply parts number

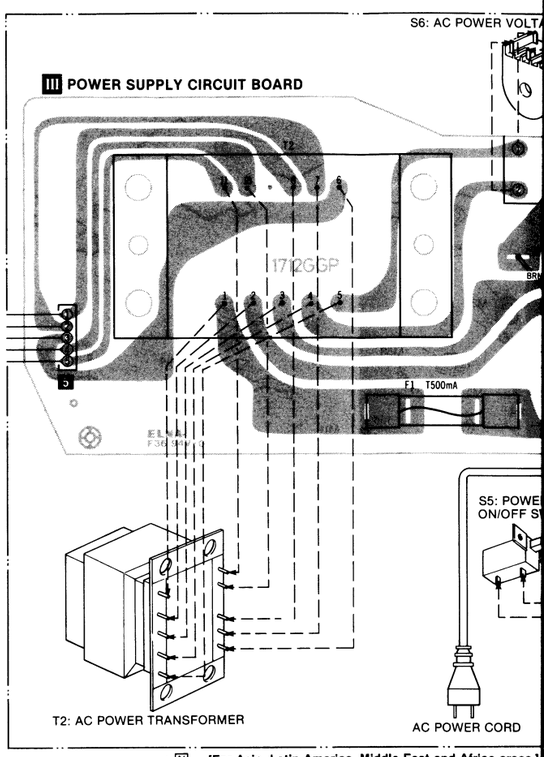
- **The supply parts number is described alone in the replacement parts list.**

- **This schematic diagram may be modified at any time with the development of new technology.**

CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



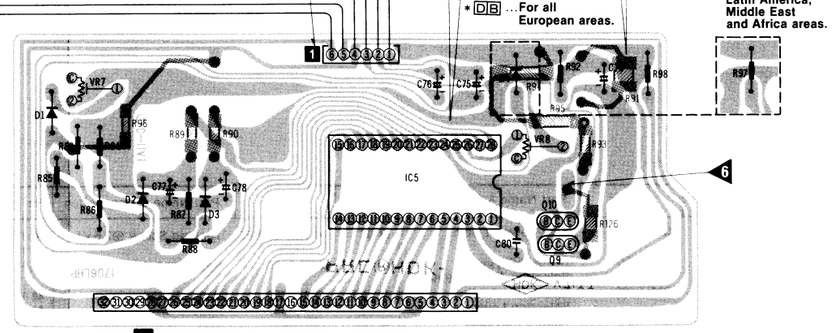



S6: AC POWER VOLTA
III POWER SUPPLY CIRCUIT BOARD
F1 T500mA
S5: POWE ON/OFF SW
T2: AC POWER TRANSFORMER
AC POWER CORD
* N ...[For Asia, Latin America, Middle East and Africa areas.]

CONNECTOR B

1	SIGNAL IN (L-CH)
2	SIGNAL IN (R-CH)
3	B- (bias) -10V
4	B+ (bias) +10V
5, 6	AC VOLTAGE (to FILAMENT)

V HEADPHONES CIRCUIT BOARD


B+ (bias) 10V
B (bias) 10V
* DB ...For all European areas.
* N ...For Asia, Latin America, Middle East and Africa areas.
II FL METER CIRCUIT BOARD

IC1 [M5219L]

1	0V
2	0V
3	0V
4	−10.2V (−10.3V)
5	0V
6	0V
7	0V
8	9.6V (10.0V)

IC2 [M5218L]

1	0V
2	0V
3	0V
4	−12.9V (−13.7V)
5	0V
6	0V
7	0V
8	13.4V (14.3V)

NOTES:
BLK .....Black
BLU .....Blue
BRN.....Brown
GRY.....Gray
GRN ...Green
L. BLU ...Light Blue
NIL .....No Color Mark
ORG ...Orange
PNK.....Pink
RED.....Red
SLD .....Shield Wire
VLT .....Violet
WHT.....White
YEL .....Yellow

NOTES:

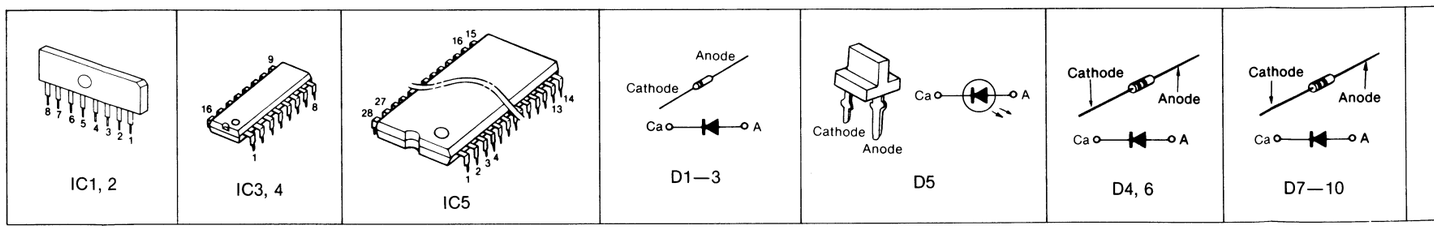
- The circuit shown in ▒▒ on the conductor indicates printed circuit, which is included printed type resistors.
- The circuit shown in ▒▒ on the conductor indicates printed circuit on the back side of the printed circuit board.
- The symbols (●) indicate connection points between conductors on the front side and back side of the circuit board.
- Values indicated in ▭ are under no signal condition.
  Unless otherwise specified, voltage measurement conditions are that tape travel is at STOP, tape mode at NORMAL, and Dolby NR switch at OFF.

REC .....Voltage at record mode.
PLAY .....Voltage at playback mode.
REC/PLAY .....Voltage at record/playback mode.
Normal .....Voltage Normal tape mode.
CrO_2.....Voltage at CrO_2 tape mode.
Metal .....Voltage at Metal tape mode.
For measurement, use VTVM.

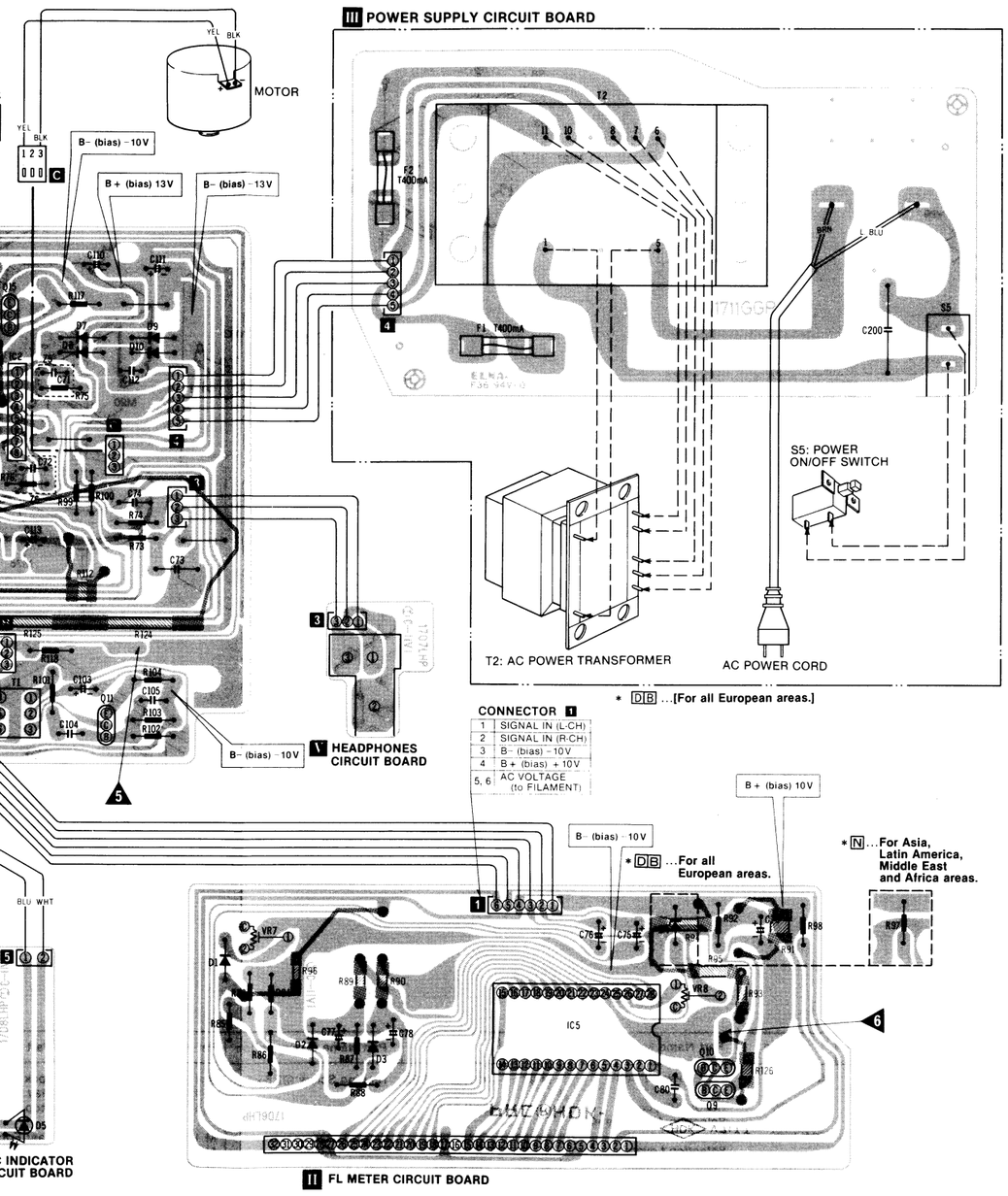
- **The supply parts number is described alone in the replacement parts list.**

- **This circuit board diagram may be modified at any time with the development of new technology.**

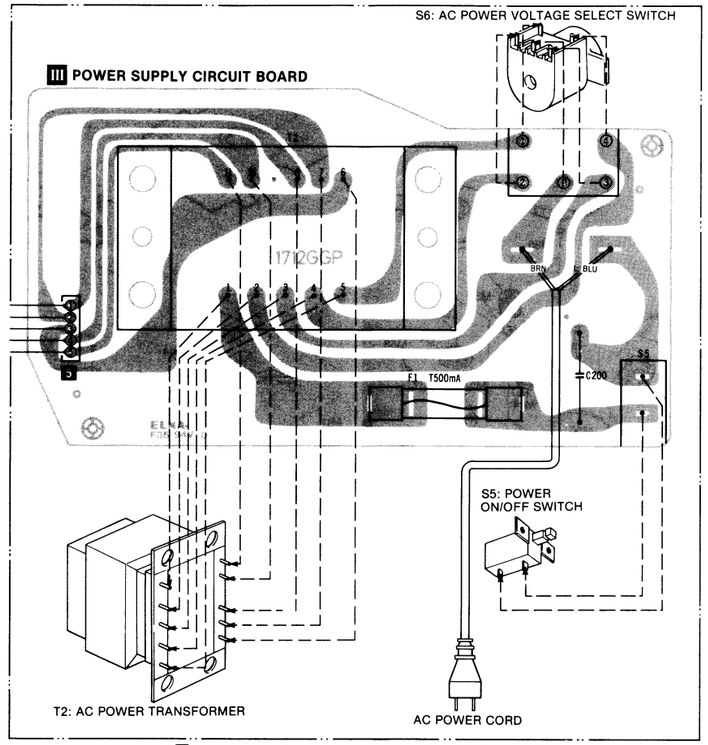
TERMINATIONS



RAM



CONNECTOR 1	
1	SIGNAL IN (L-CH)
2	SIGNAL IN (R-CH)
3	B- (bias) -10V
4	B+ (bias) +10V
5, 6	AC VOLTAGE (to FILAMENT)


S6: AC POWER VOLTAGE SELECT SWITCH
III POWER SUPPLY CIRCUIT BOARD
F1 T500mA
C200
S5
S5: POWER ON/OFF SWITCH
T2: AC POWER TRANSFORMER
AC POWER CORD
* N ...[For Asia, Latin America, Middle East and Africa areas.]

Q1, 2 [2SC1685-Q]

	E	C	B
PLAY	0V	0V	0.7V
REC	0V	0V	−0.3V

Q3, 4 [2SC1685-Q]

	E	C	B
PLAY	−8.9V	−6.5V	−8.2V
REC	−8.8V	−7.0V	−8.2V

Q5, 6 [2SC1685-Q]

		E	C	B
PLAY	Normal	0V	0V	0V
	CrO_2			0.7V
	Metal			0.7V
REC	Normal	0V	0V	0V
	CrO_2			0.7V
	Metal			0.7V

Q7, 8 [2SC1685-Q]

	E	C	B
PLAY	0V	0V	−0.3V
REC	0V	0V	−0.4V
STOP	0V	0V	0.7V

Q13 [2SA564]

	E	C	B
PLAY	10.0V	−0.4V	9.9V
REC	9.6V	−0.4V	9.6V
STOP	9.1V	9.8V	9.1V

Q14 [2SC1846R]

	E	C	B
PLAY	10.0V	14.2V	11.5V
REC	9.7V	13.3V	11.4V

Q15 [2SA885R]

PLAY	−10.3V	−13.6V	−10.9V
REC	−10.2V	−12.8V	−10.9V

IC1 [M5219L]

1	0V
2	0V
3	0V
4	−10.2V (−10.3V)
5	0V
6	0V
7	0V
8	9.6V (10.0V)

IC2 [M5218L]

1	0V
2	0V
3	0V
4	−12.9V (−13.7V)
5	0V
6	0V
7	0V
8	13.4V (14.3V)

IC3, 4 [NE646N]

1	0V
2	0V
3	0.1V
4	0V
5	0V
6	0V
7	−0.1V
8	0V
9	−10.2V (−10.3V)
10	0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	9.4V (10.0V)

Q11 [2SD592]

	E	C	B
PLAY	−10.3V	−10.3V	−10.3V
Normal/REC	−9.7V	−3.5V	−10.0V
Metal/REC	−9.6V	+3.4V	−9.7V

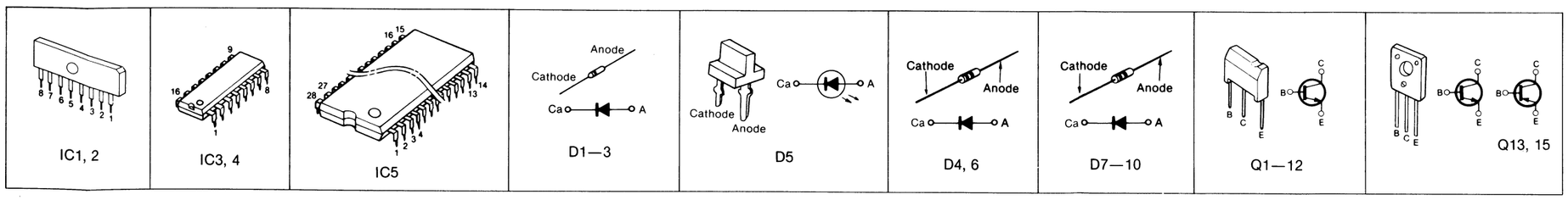
Q12 [2SC1685-Q]

	E	C	B
PLAY	0V	9.9V	0V
REC	0V	9.6V	0V
STOP	0V	0V	0.7V

NOTES:

BLK .....Black
BLU .....Blue
BRN.....Brown
GRY.....Gray
GRN ...Green
L. BLU ...Light Blue
NIL .....No Color Mark
ORG ...Orange
PNK.....Pink
RED.....Red
SLD .....Shield Wire
VLT .....Violet
WHT.....White
YEL .....Yellow

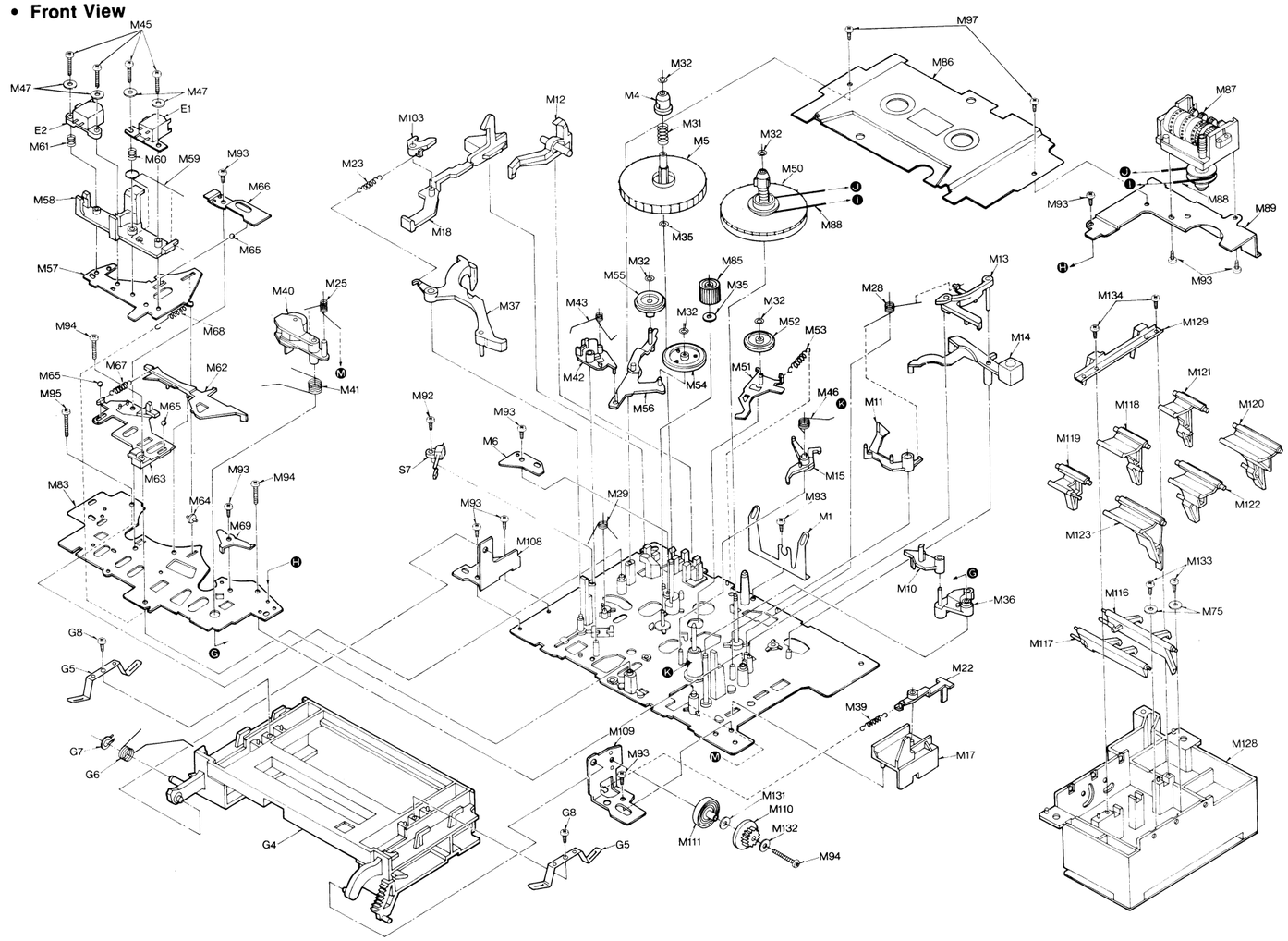
TERMINATIONS



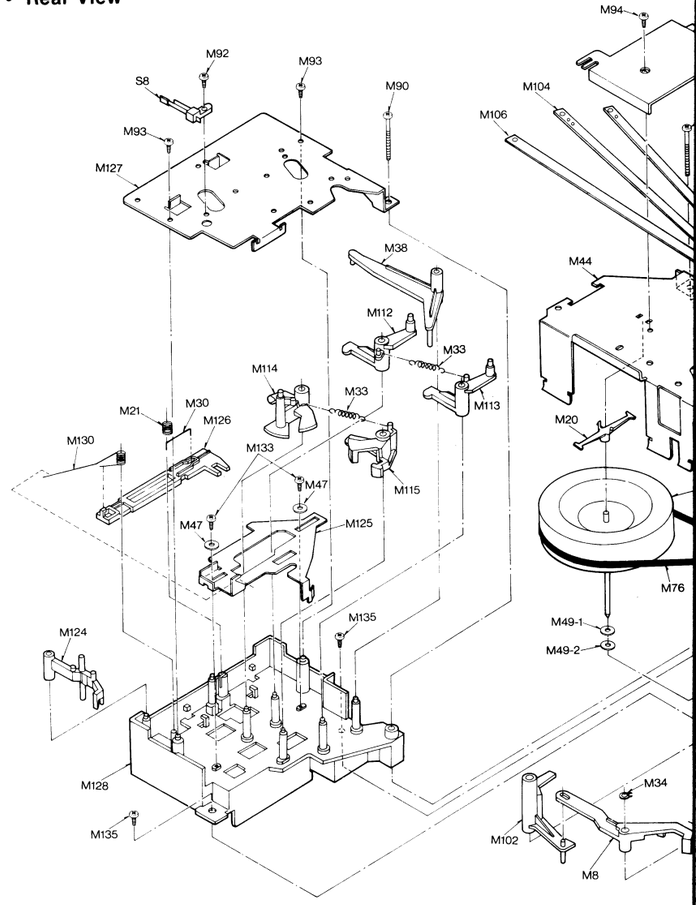
RS-M216

MECHANICAL PARTS LOCATION

• **Front View**

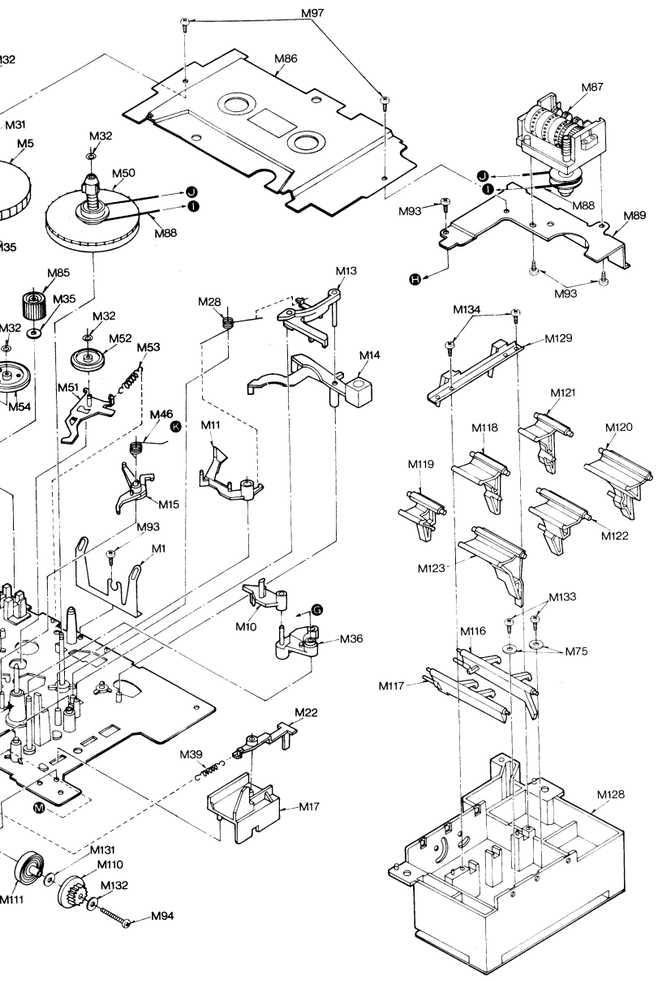


• **Rear View**

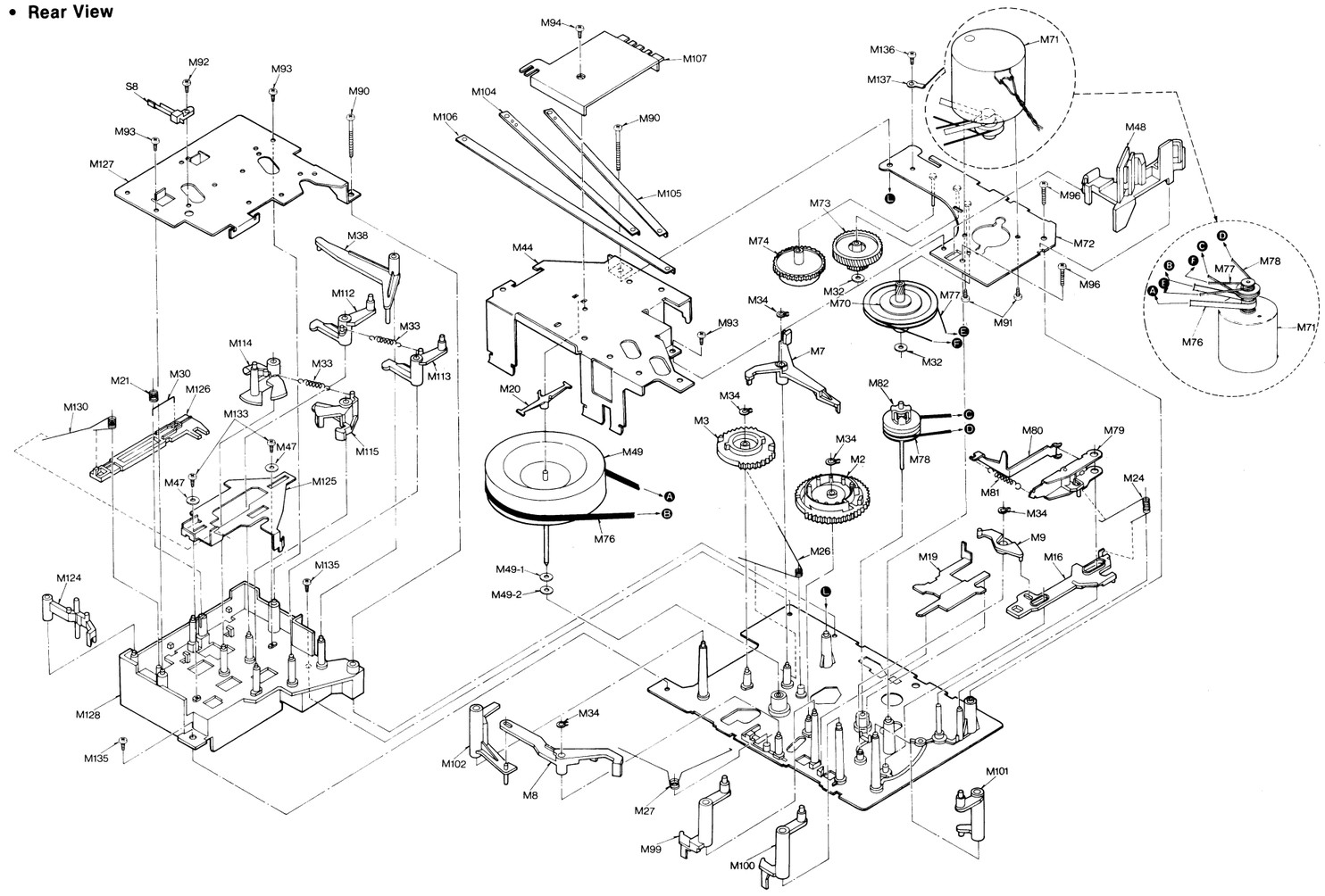


REPLACEMENT PARTS LIST

Ref No.	Part No.	Part Name & Description
		MECHANICAL PARTS
M 1	QBP1874	Cassette Pressure Spring
M 2	QDG1201	Main Gear
M 3	QDG1202	Sub Gear
M 4	QMB1336	Supply Reel Table Hub
M 5	QDR1139	Supply Reel Table
M 6	QMF2118	Fast Forward Arm Bracket
M 7	QML3899	Sub Control Lever
M 8	QML3898	Main Control Lever
M 9	QML3900	Record Operation Lever
M 10	QML3586	Head Base Plate Lift Lever
M 11	QML3594	Auto-Stop Release Arm
M 12	QML3603	Erase Safety Lever
M 13	QML3604	Auto-Stop Driving Lever
M 14	QML3605	Auto-Stop Detection Lever
M 15	QML3592	Change Lever
M 16	QMR2013	Record Rod
M 17	QMR2011	Auto-Stop Connection Rod
M 18	QMR2014	Eject Rod
M 19	QMR2012	Control Rod
M 20	QMZ1283	Flywheel Thrust Retainer
M 21	QBC1357	Lock Pin Pressure Spring
M 22	QML3896	Auto-Stop Selection Lever
M 23	QBT1962	Main Lever Spring
M 24	QBN1739	Selection Lever Spring
M 25	QBN1742	Pressure Roller Release Spring
M 26	QBN1744	Sub Gear Spring
M 27	QBN1897	Main Gear Spring
M 28	QBN1746	Auto-Stop Lever Spring
M 29	QBN1747	Connection Spring
M 30	QBS1137	Pause Lock Pin
M 31	QBC1372	Reel Table Spring
M 32	QBW2008	Poly Washer
M 33	QBT1961	Operating Change Lever Spring
M 34	XUB3FT	Stop Ring 3φ
M 35	QBW2012	Poly Washer
M 36	QXL1354	Sub Lever Assembly
M 37	QXL1355	Main Lever Assembly
M 38	QML3882	Pause Change Lever
M 39	QBT1682	Lock Retainer Spring
M 40	QXL1381	Pressure Roller Assembly
M 41	QBN1743	Pressure Roller Spring
M 42	QML3588	Fast Forward Lever
M 43	QBN1748	Fast Forward Spring
M 44	QMA4410	Flywheel Retainer
M 45	XSN2 + 10	Screw ⊕2 × 10
M 46	QBN1741	Change Lever Spring
M 47	XWG2B	Washer 2φ
M 48	QMZ1254	Cord Clamper
M 49	QXF0199	Flywheel Assembly
M 49-1	QBW2049	Poly Washer
M 49-2	QBW2026	Snap Ring
M 50	QXD1143	Takeup Reel Table Assembly
M 51	QXL1382	Idler Lever Assembly
M 52	QXi0111	Takeup Idler Assembly
M 53	QBT1893	Takeup Idler Spring
M 54	QXi0113	Fast Forward Idler Assembly
M 55	QXi0112	Rewind Idler Assembly
M 56	QXL1383	Fast Forward Arm Assembly
M 57	QMK1840	Head Base Plate
M 58	QMZ1241	Head Spacer
M 59	QBN1740	Head Pressure Spring
M 60	QBC1278	Head Spring
M 61	QBCA0008	Head Spring
M 62	QML3591	Brake Arm
M 63	QMZ1240	Sub Head Base Plate
M 64	QMN2550	Roller
M 65	QDK1017	Steel Ball 2φ
M 66	QBP1873	Head Base Plate Pressure Spring
M 67	QBT1597	Brake Arm Spring
M 68	QBT1892	Head Release Spring
M 69	QMA3858	Head Adjustment Plate
M 70	QZK0241	Takeup Gear Assembly
M 71	QXU0297	Motor Assembly
M 72	QXK2286	Sub Chassis Assembly
M 73	QDG1199	Auto-Stop Gear
M 74	QDG1200	Cam Gear
M 75	XWG2	Washer 2 φ
M 76	QDB0324	Capstan Belt
M 77	QDB0274	Takeup Belt
M 78	QDB0273	Fast Forward Belt
M 79	QXL1360	Record/Playback Selection Arm Assembly
M 80	QML3580	Record/Playback Selection Lever
M 81	QBT1895	Record/Playback Selection Lever Spring
M 82	QXP0607	Fast Forward Connection Pulley Assembly
M 83	QMK1838	Upper Base Plate
M 85	QDP1828	Fast Forward Pulley
M 86	QXH0408	Chassis Cover Assembly
M 87	QDC0126	Tape Counter
M 88	QDB0169	Counter Belt
M 89	QMA4439	Counter Angle
M 90	XTN3 + 24B	Tapping Screw ⊕3 × 24
M 91	XSN26 + 3	Screw ⊕2.6 × 3
M 92	XTN2 + 6B	Tapping Screw ⊕2 × 6
M 93	XTN26 + 6B	Tapping Screw ⊕2.6 × 6
M 94	XTN26 + 10B	Tapping Screw ⊕2.6 × 10
M 95	XTN26 + 12B	Tapping Screw ⊕2.6 × 12
M 96	XTN3 + 10B	Tapping Screw ⊕3 × 10
M 97	XTN26 + 5BFZ	Tapping Screw ⊕2.6 × 5
M 99	QML3885	Fast Foward Driving Lever
M 100	QML3886	Rewind Driving Lever
M 101	QML3887	Record Driving Lever
M 102	QML3897	Play Changing Lever
M 103	QML3901	Eject Obstruction Lever
M 104	QMR2007	Fast Foward Connection Plate
M 105	QMR2008	Rewind Connection Plate
M 106	QMR2009	Record Connection Plate
M 107	QMZ1288	Connection Plate Retainer
M 108	QMA4411	Holding Angle-L
M 109	QMA4412	Holding Angle-R
M 110	QDG1254	Damper Gear
M 111	QDP1920	Damper Retainer
M 112	QML3878	Fast Forward Change Lever
M 113	QML3879	Rewind Change Lever
M 114	QML3880	Record Change Lever
M 115	QML3881	Play Change Lever
M 116	QML3883	Lock Arm-A
M 117	QML3884	Lock Arm
M 118	QML3888	Play Leve
M 119	QML3889	Stop leve
M 120	QML3890	Fast For
M 121	QML3891	Rewind L
M 122	QML3892	Record L
M 123	QML3893	Pause Le
M 124	QML3894	Muting L
M 125	QMR2006	Fast Win
M 126	QMR2010	Pause Re
M 127	QMF2245	Operatin
M 128	QKJ0537	Operatin
M 129	QBP1953	Operatin
M 130	QBN1898	Fast Win
M 131	QBW2020	Washer 2
M 132	XWG26	Washer 2
M 133	XTN2 + 5B	Tapping
M 134	XTN2 + 4BFZ	Tapping
M 135	XTN3 + 6B	Tapping
M 136	XTN3 + 12B	Tapping
M 137	QJT0015	Lug Term



• **Rear View**



f No.	Part No.	Part Name & Description
40	QXL1381	Pressure Roller Assembly
41	QBN1743	Pressure Roller Spring
42	QML3588	Fast Forward Lever
43	QBN1748	Fast Forward Spring
44	QMA4410	Flywheel Retainer
45	XSN2 + 10	Screw ⊕2 × 10
46	QBN1741	Change Lever Spring
47	XWG2B	Washer 2φ
48	QMZ1254	Cord Clamper
49	QXF0199	Flywheel Assembly
49-1	QBW2049	Poly Washer
49-2	QBW2026	Snap Ring
50	QXD1143	Takeup Reel Table Assembly
51	QXL1382	Idler Lever Assembly
52	QXi0111	Takeup Idler Assembly
53	QBT1893	Takeup Idler Spring
54	QXi0113	Fast Forward Idler Assembly
55	QXi0112	Rewind Idler Assembly
56	QXL1383	Fast Forward Arm Assembly

Ref No.	Part No.	Part Name & Description
M 57	QMK1840	Head Base Plate
M 58	QMZ1241	Head Spacer
M 59	QBN1740	Head Pressure Spring
M 60	QBC1278	Head Spring
M 61	QBCA0008	Head Spring
M 62	QML3591	Brake Arm
M 63	QMZ1240	Sub Head Base Plate
M 64	QMN2550	Roller
M 65	QDK1017	Steel Ball 2φ
M 66	QBP1873	Head Base Plate Pressure Spring
M 67	QBT1597	Brake Arm Spring
M 68	QBT1892	Head Release Spring
M 69	QMA3858	Head Adjustment Plate
M 70	QZK0241	Takeup Gear Assembly
M 71	QXU0297	Motor Assembly
M 72	QXK2286	Sub Chassis Assembly
M 73	QDG1199	Auto-Stop Gear
M 74	QDG1200	Cam Gear
M 75	XWG2	Washer 2 φ
M 76	QDB0324	Capstan Belt
M 77	QDB0274	Takeup Belt

Ref No.	Part No.	Part Name & Description
M 78	QDB0273	Fast Forward Belt
M 79	QXL1360	Record/Playback Selection Arm Assembly
M 80	QML3580	Record/Playback Selection Lever
M 81	QBT1895	Record/Playback Selection Lever Spring
M 82	QXP0607	Fast Forward Connection Pulley Assembly
M 83	QMK1838	Upper Base Plate
M 85	QDP1828	Fast Forward Pulley
M 86	QXH0408	Chassis Cover Assembly
M 87	QDC0126	Tape Counter
M 88	QDB0169	Counter Belt
M 89	QMA4439	Counter Angle
M 90	XTN3 + 24B	Tapping Screw ⊕3 × 24
M 91	XSN26 + 3	Screw ⊕2.6 × 3
M 92	XTN2 + 6B	Tapping Screw ⊕2 × 6
M 93	XTN26 + 6B	Tapping Screw ⊕2.6 × 6
M 94	XTN26 + 10B	Tapping Screw ⊕2.6 × 10
M 95	XTN26 + 12B	Tapping Screw ⊕2.6 × 12
M 96	XTN3 + 10B	Tapping Screw ⊕3 × 10

Ref No.	Part No.	Part Name & Description
M 97	XTN26 + 5BFZ	Tapping Screw ⊕2.6 × 5
M 99	QML3885	Fast Foward Driving Lever
M 100	QML3886	Rewind Driving Lever
M 101	QML3887	Record Driving Lever
M 102	QML3897	Play Changing Lever
M 103	QML3901	Eject Obstruction Lever
M 104	QMR2007	Fast Foward Connection Plate
M 105	QMR2008	Rewind Connection Plate
M 106	QMR2009	Record Connection Plate
M 107	QMZ1288	Connection Plate Retainer
M 108	QMA4411	Holding Angle-L
M 109	QMA4412	Holding Angle-R
M 110	QDG1254	Damper Gear
M 111	QDP1920	Damper Retainer
M 112	QML3878	Fast Forward Change Lever
M 113	QML3879	Rewind Change Lever
M 114	QML3880	Record Change Lever
M 115	QML3881	Play Change Lever
M 116	QML3883	Lock Arm-A

Ref No.	Part No.	Part Name & Description
M 117	QML3884	Lock Arm-B
M 118	QML3888	Play Lever
M 119	QML3889	Stop lever
M 120	QML3890	Fast Forward Lever
M 121	QML3891	Rewind Lever
M 122	QML3892	Record Lever
M 123	QML3893	Pause Lever
M 124	QML3894	Muting Lever
M 125	QMR2006	Fast Wind Rod
M 126	QMR2010	Pause Rod
M 127	QMF2245	Operating Button Plate
M 128	QKJ0537	Operating Button Frame
M 129	QBP1953	Operating Lever Spring
M 130	QBN1898	Fast Wind Rod Spring
M 131	QBW2020	Washer
M 132	XWG26	Washer 2.6φ
M 133	XTN2 + 5B	Tapping Screw ⊕2 × 5
M 134	XTN2 + 4BFZ	Tapping Screw ⊕2 × 4
M 135	XTN3 + 6B	Tapping Screw ⊕3 × 6
M 136	XTN3 + 12B	Tapping Screw ⊕3 × 12
M 137	QJT0015	Lug Terminal

When servicing this mechanism unit, refer to the disassembly notes and assembly instructions described in the service manuals of RS-M51, RS-M13, RS-M14 and RS-M04 (RS-M24 mechanism series).

SPECIFICATIONS

Pressure of pressure roller	350 ± 50 g
Takeup tension * Use cassette torque meter ··· QZZSRKCT	45^{+15}_{-15} g-cm
Wow and flutter; (JIS) * Use test tape ··· QZZCWAT	Less than 0.08% (WRMS)

Motor Unit Disassembly

1. Remove screw (A) and connection plate retainer (M107). The remove fast forward connection plate (M104), rewind connection plate (M105) and record connection plate (M106) (see Fig. 1).
2. Remove three screws (B) and remove operation button unit (see Fig. 2).
3. Remove two screws (C) and hook at section (D) to dismount flywheel retainer (M44) (see Fig. 2).
4. Remove hook at section (E) and cord clamper (M48) (see Fig. 2), and then remove two screws (F) (see Fig. 3) to dismount motor unit.

Precautions for Mechanism Unit Assembly

Before installing the operation button unit in the mechanism unit, pull the play changing lever (M102) of the mechanism unit in the direction of the arrow until it is locked, and set the pause, F.F. and rewind buttons of the operation button unit to OFF. At this time, check that all parts are installed at their proper positions at sections (G), (H) and (I) (see Fig. 2).

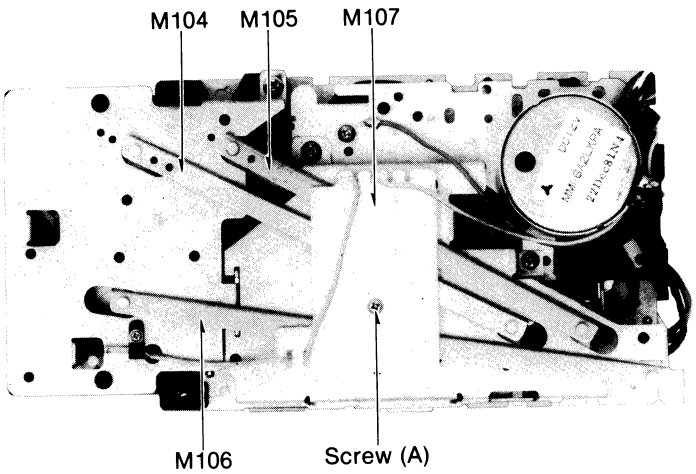


Fig. 1

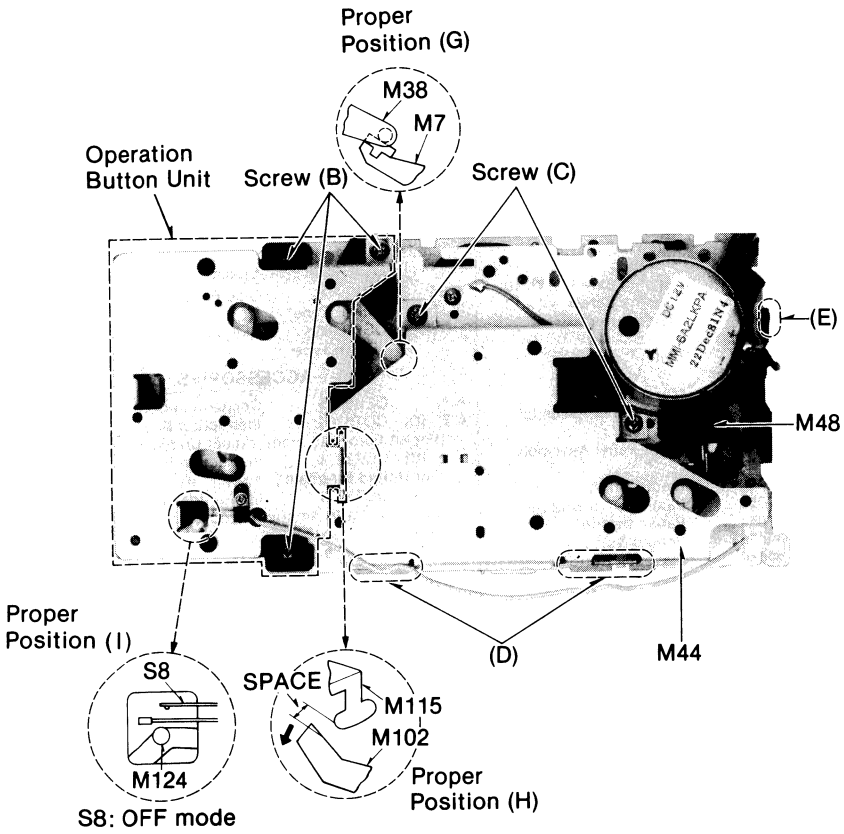


Fig. 2

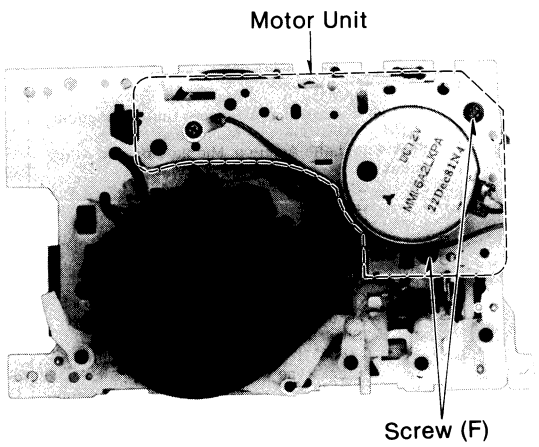
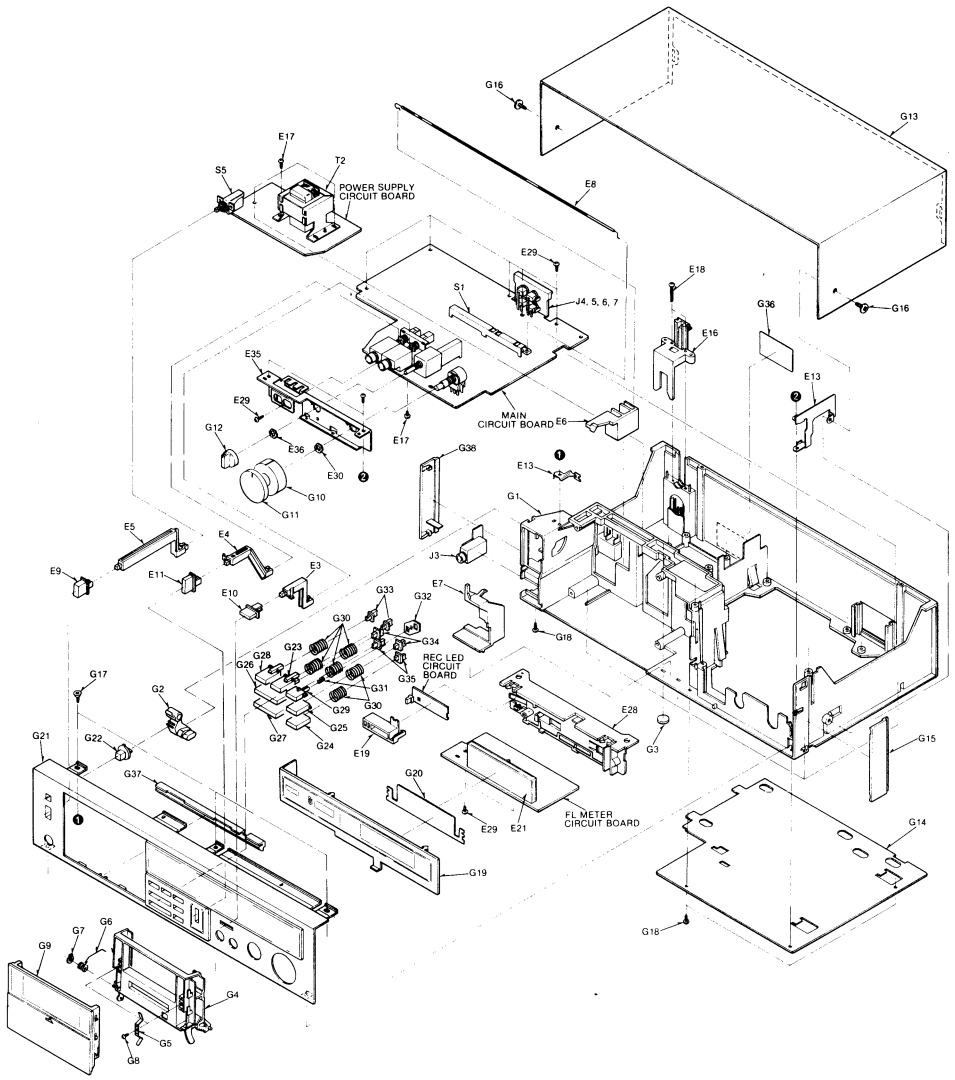


Fig. 3

CABINET PARTS LOCATION



REPLACEMENT PARTS LIST

Ref No.	Part No.	Part Name & Description
		CABINET PARTS
G 1	[D] QKM1521K	Main Case
	[For all European areas except United Kingdom.]	
	[N] QKM1530K	Main Case
	[For Asia, Latin America, Middle East and Africa areas.]	
G 2	QML3908	Eject Lever
G 3	QKA1081	Rubber Foot
G 4	QKF2105	Cassette Holder
G 5	QBP1923	Holder Spring
G 6	QBN1893	Eject Spring
G 7	XUB5FT	Stop Ring 5φ
G 8	XTN26+5BFZ	Tapping Screw ⊕2.6×5
G 9	QYF0551	Cassette Lid Assembly
	"Silver Type"	
	QYF0551K	Cassette Lid Assembly
	"Black Type"	
G 10	QYT0647	Volume Knob-R Assembly
G 11	QYT0648	Volume Knob-L Assembly
G 12	QGT1591	Tape Selector Knob
G 13	QGC1231	Case Cover
	"Silver Type"	
	QGC1231K	Case Cover
	"Black Type"	
G 14	QGC1232	Bottom Cover
G 15	QGK3260	Side Panel-R
	"Silver Type"	
	QGK3260K	Side Panel-R
	"Black Type"	
G 16	QHQ1324	Screw
	"Silver Type"	
	QHQ1324K	Screw
	"Black Type"	
G 17	XTS3+10B	Tapping Screw ⊕3×10
G 18	XTN3+10B	Tapping Screw ⊕3×10
G 19	QGK3263	Meter Cover
	"Silver Type"	
	QGK3263Y	Meter Cover
	"Black Type"	
G 20	QGL1177	Meter Filter
G 21	QYP1108	Front Panel Assembly
	"Silver Type"	
	QYP1108K	Front Panel Assembly
	"Black Type"	
G 22	QGO2059	Eject Button
G 23	QGO2053	Fast Foward Buttom
G 24	QGO2054	Pause Button
G 25	QGO2055	Record Button
G 26	QGO2056	Playback Button
G 27	QGO2057	Stop Button
G 28	QGO2058	Rewind Button
G 29	QGO2060	Counter Reset Button
G 30	QBC1414	Button Spring
G 31	QBC1187	Idler Spring
G 32	QKJ0547	Spring Holder
G 33	QKJ0544	Button Rod-A
G 34	QKJ0545	Button Rod-B
G 35	QKJ0546	Button Rod-C
G 36	[B] QGS2989	Main Name Plate
	[For United Kingdom.]	
	[N] QGS2990	Main Name Plate
	[For Asia, Latin America, Middle East and Africa areas.]	
G 37	QGK3259K	Space
G 38	QGK3286	Side Panel-L
	"Silver Type"	
	QGK3286K	Side Panel-L
	"Black Type"	
		ACCESSORIES
A 1	QEB0125	Connection Cord
A 2	[D] QQT3263	Instruction Book
	[For all European areas except United Kingdom.]	
	[B] QQT3264	Instruction Book
	[For United Kingdom.]	
	[N] QQT3296	Instruction Book
	[For Asia, Latin America, Middle East and Africa areas.]	
		PACKINGS
P 1	[DB] QPN4314	Inside Carton
	[For all European areas.]	
	[N] QPN4325	Inside Carton
	[For Asia, Latin America, Middle East and Africa areas.]	
P 2	QPA0675	Cushion-R
P 3	QPA0676	Cushion-L
P 4	QPS0434	PAD
P 5	QPC0072	Poly Sheet
		(for AC Power Cord)
P 6	XZB40X60A02	Poly Bag (for UNIT)

ARD H.M D DK B N NK

Printed in Japan

ORDER NO. ARD- 8311030P

Parts Change Notice

(D)...For all European areas except United Kingdom.
(B)...For United Kingdom.
(N)...For Asia, Latin America, Middle East and Africa areas.
(A)...For Australia.

Model No.

RS-M216

(F)...For Asian PX.
(J)...For European PX.

Please revise the original parts list in the Service Manual to conform to the change(s) shown herein. If new part numbers are shown, be sure to use them when ordering parts.

Reason for Change	*The circled item indicates the reason. If no marking, see the Notes in the bottom column.
1. Improve performance	
2. Change of material or dimension	
3. To meet approved specification	
4. Standardization	
5. Addition	
6. Deletion	
7. Correction	
8. Other	

Interchangeability Code			**The circled item indicates the interchangeability. If no marking, see the Notes in the bottom column.
	Parts	Set Production	
A	Original → Early New → Late		Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.
B	Original → Early New → Late		Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.
C	Original → Early New → Late		New parts only may be used in early or late production sets. Stock new parts.
D	Original → Early New → Late		Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Model No.	Ref. No.	Original Part No.	New Part No.	Notes (* - **)	Part Name & Descriptions
RS-M216	S6 ⚠ (N)	QSR1401H	QSR1410H	7	Rotary Switch(AC Power Voltage Selector)
"	G3	QKA1081	QKA1093	2-C	Rubber Foot
"	G6	QBN1893	QBN1937	1-C	Eject Spring
"	R7(D/B/N/A)	———	QPA0683	5-C	Speacer

NOTE:
- Important safety notice
  Components identified by ⚠ mark have special characteristics important for safety
  When replacing any of these components, use only manufacturer's specified parts

File this Parts Change Notice with your copy of the Service Manual.

Origianl Service Manual is Model No. RS-M216(D/B/N) Order No. ARD82040133C8-11.
(F/J) Order No. ARD82060156A4-01.
(A) Order No. ARD82060155A3-01.

Technics
National / Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan
Printed in Japan

ORDER NO. ARD82090133 S9-01

Service Manual

Supplement-1

Cassette Deck

RS-M216

(Black Face
Silver Face)

Slim Type Cassette Deck with New Soft Mechanism and Peak Hold FL Meters

* DOLBY SYSTEM

This is the Service Manual for the following areas.
- [D] ..... For all European areas except United Kingdom.
- [B] ..... For United Kingdom.
- [N] ..... For Asia, Latin America, Middle East and Africa areas.
- [A] ..... For Australia.
- [F] ..... For Asian PX.
- [J] ..... For European PX.

Please use this manual together with the service manual for model No. RS-M216 (Original) order No. ARD82040133C8-11.

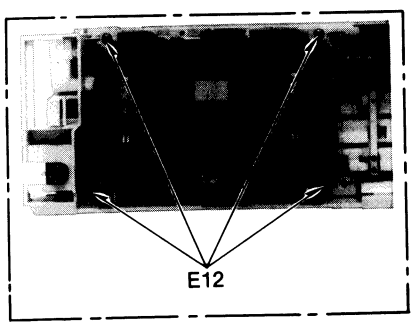
PARTS COMPARISON TABLE:

Please revise the original parts list in the Service Manual RS-M216 (of the black type model for [N] mark areas) to conform to the changes shown herein.
If new part numbers are shown, be sure to use them when ordering parts.

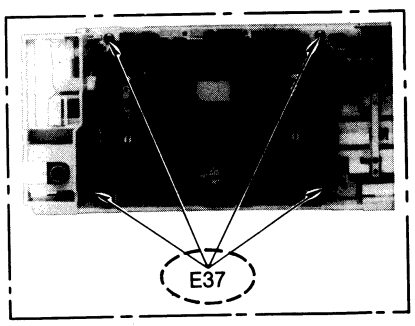
Important safety notice.
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref. No.	Part Name & Description	Part Numbers		Remarks
		Former Type	New Type	
E15 [N] ⚠	AC Power Cord	(P) JA52ZB-K	RJA52ZB-K	Corrected
E17	Tapping Screw	XTN3+10B	XTV3+8BFZ	
E37	Tapping Screw ⊕3×12	———	XTS3+12B	Added
R61, 62	Resistors	ERD25FJ6R8 (6.8Ω)	ERD25FJ3R3 (3.3Ω)	
C44	Capacitor	———	ECEA50Z1	Added
P4	Pad	QPS0434	———	Deleted

ELECTRICAL PARTS LOCATION (DIFFERENCE)



Former Type



New Type

* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

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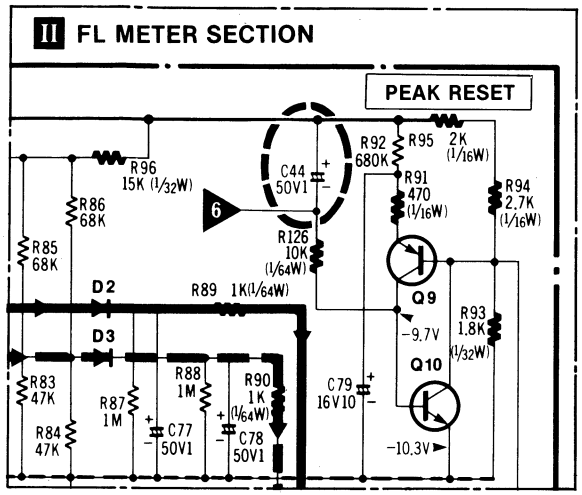
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

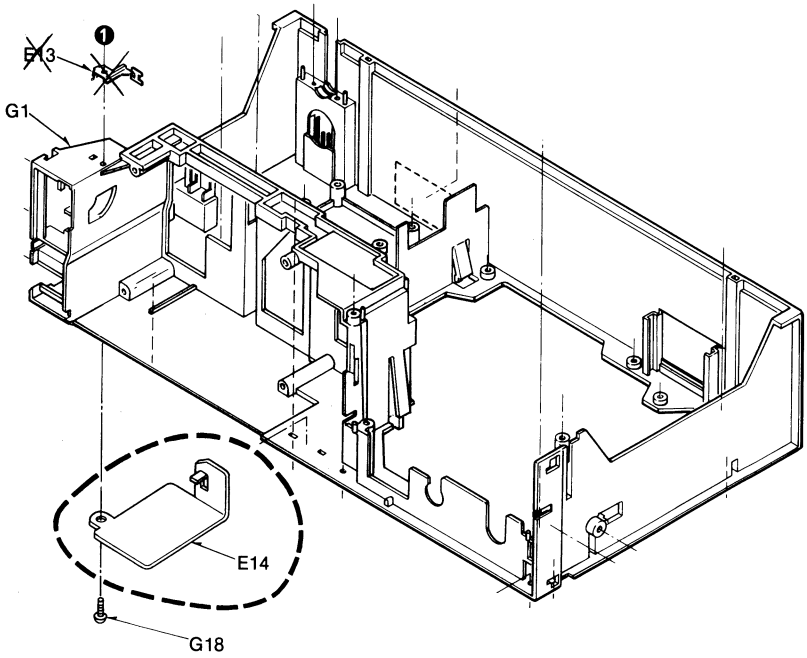
Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
1-2, 1-chome, Shibakoen, Minato-ku, Tokyo 105 Japan

RS-M216

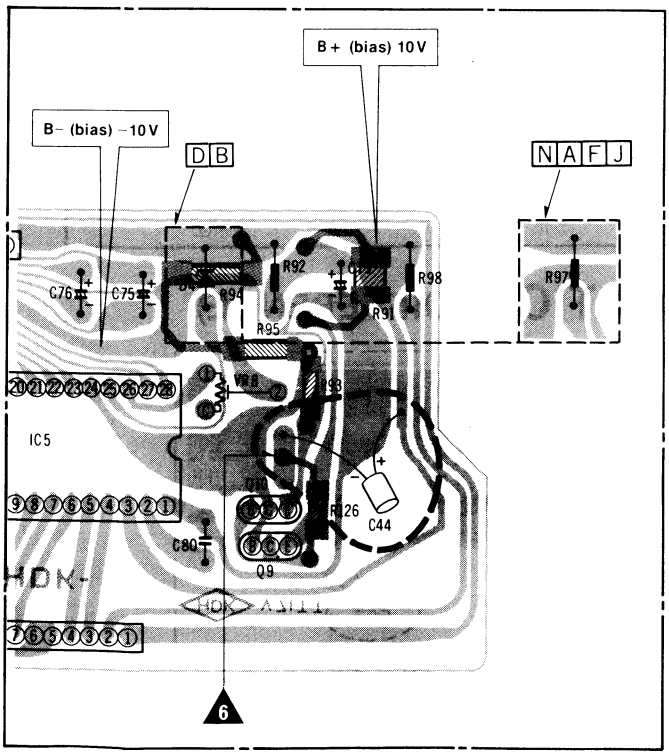
SCHEMATIC DIAGRAM
(ADDITTION)



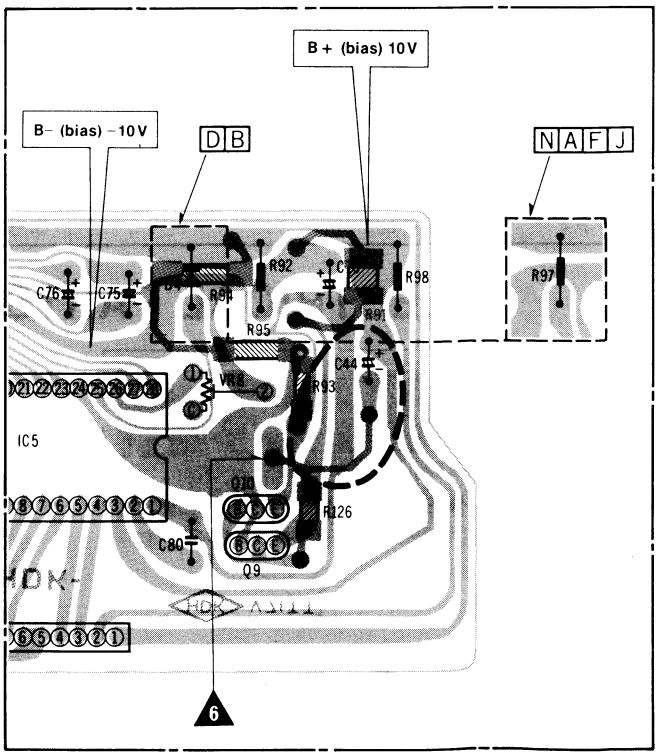
CABINET PARTS LOCATION
(CORRECTION)



CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM
(ADDITION)



Former Type



New Type

ARD
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